



Heroes
of the
Farthest North
and
Farthest South
J. Kennedy MacLean

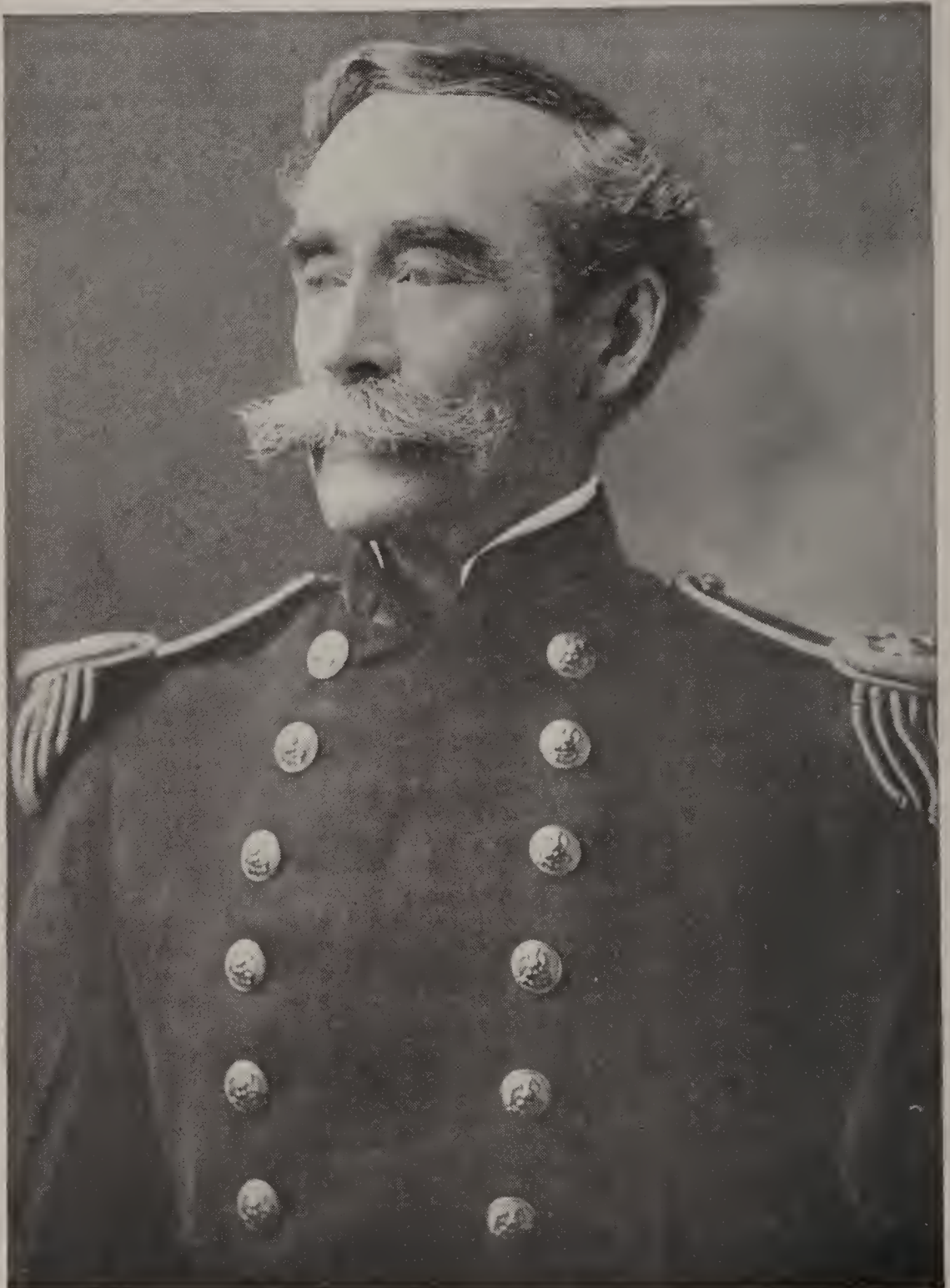


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ADMIRAL ROBERT E. PEARY, DISCOVERER OF THE
NORTH POLE

Heroes of the Farthest North and Farthest South

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Revised and Enlarged
By
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ILLUSTRATED

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PREFACE

The present revision of Mr. Maclean's stirring story adds nearly a third more of material—a portion to the earlier chapters, and the bulk at the end. We have tried to include in the covers of a single volume a complete picture of polar conquest. We begin at the beginning, "The Men Who First Sought the Pole," away back in the days of the Norsemen. Then came the search for the Northwest Passage, which was so closely linked with the early exploration and development of our own country. We remember that Hudson sailed up the river which bears his name, believing he was entering that trade route to the Indies. John and Sebastian Cabot coasted along the shores of Newfoundland, on the same quest. Even Columbus, still earlier, was sailing for the Indies when he sighted America. Frobisher, Davis, Scoresby, Franklin, Parry and other intrepid voyagers came next; and upon each expedition the frozen North yielded up a few more of its jealously guarded secrets. Then came Kane, Greely, and a score of American explorers. Nansen, of

Norway, set a new high mark, but was followed by our own Peary and the conquest of the North Pole itself.

This great victory still further stimulated interest in the Southern region, culminating in the magnificent dashes of Shackleton, Scott and Amundsen, leaving the flags of Norway and Britain floating side by side at the South Pole.

Still more recent voyages have been undertaken, both north and south, which are described in the final chapter. A chronology follows, giving a concise survey in point of time of these voyages and explorations. But no summary or survey can apprise the reader of the hardships, daring, and almost superhuman endurance which have made such a story possible. It stands almost without a parallel in human annals.

J. W. M.

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Heroes of Farthest North and Farthest South

I

THE MEN WHO FIRST SOUGHT THE POLE

THE story of North Pole adventure dates back over a thousand years. Long before Columbus had sailed his three tiny vessels across the Atlantic to find a new world, adventurers were thinking and talking and planning of a way to reach the extreme north.

Our first historical record of such adventure dates back to the early days of English history when good King Alfred sat upon the throne.

Residing at the court of Alfred, about the year 890, was a Norwegian named Othar, who, feeling, as he himself said, "a desire to learn how far the land stretched towards the north, and if there were any regions inhabited by man northward beyond the desert waste," sailed away on a voyage of geographical discovery, and on his return made a report of his enterprise to the king, who placed on record the re-

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sults of the voyage. Thus, while Othar the Norwegian was the first to enter the Arctic sea, King Alfred of England was the earliest chronicler of Arctic adventure.

It is possible that Othar's example was followed by other daring Northmen, for the spirit of adventure was in their blood, and they loved the wild life of the rover; but almost a century elapsed before seafarers turned their prows northward again, or the curtain was again lifted in the Polar sea.

A certain bold Icelandic rover, Eric the Red, had been convicted of manslaughter, and sentenced to banishment for a term of years. Resolving to employ his enforced absence from his fatherland in exploration, he "prepared a vessel and sailing with his followers in a westerly course, he came in sight of the east coast of Greenland, along which he steered southwards, looking for a habitable spot. Having spent three years in exploring the western coasts of Greenland, he returned to Iceland, and made so favorable a report of the new country that, in 985 or 986, he induced a large body of colonists to sail with him from Iceland in twenty-five ships. Half of the ill-fated fleet perished in the ice; but the remnant reached their destination, and a few years later all the habitable places of Greenland were occupied."



MAP OF NORTH POLAR REGIONS

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For the next five centuries little seems to have been done towards wresting the secrets of the Arctic; until the century that knew Columbus was ushered in. Then a spirit of restlessness and desire to know more about the world was shown in many lands.

In 1491 there came to the court of Henry VII., of England, a Venetian named Giovanni Cabot, better known in England as John Cabot. His object was to enlist the support of the king on behalf of his seafaring enterprises, as he already failed in a similar mission at the courts of Spain and Portugal. His appeal to England's king was not in vain. Henry, who had been disappointed in his efforts to secure the services of Columbus, granted, in 1496, letters-patent to John Cabot and his three sons to take possession, on behalf of England, of any unknown country that they might discover.

In their frail vessel, the *Matthew*, the adventurous John Cabot and his son Sebastian sailed from Bristol in 1497, and in June of the same year came within sight of what is supposed to have been Newfoundland; though some authorities are of opinion that it was the coast of Labrador which was discovered. Along this coast they sailed for about nine hundred miles. Landing, they could discover no people; and there they planted on the soil the banners of

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England and of Venice. Returning to England, they poured into the ears of the delighted king the story of their success, and preparations were immediately begun for a second voyage across the Atlantic. In 1498, Henry granted to Cabot special authority to obtain ships and volunteers, and an expedition, consisting of a fleet of five ships, sailed from Bristol, but never returned; and of its fate nothing was ever heard.

The Portuguese began to be active on their own account at the same time. Their first expedition, sailing under Gaspar Corte-Real, in 1500, reached the coast of Greenland. A more ambitious voyage the following year extended westward across the Atlantic to the shores of the North American continent near Greenland. Like Cabot's second adventure, that of Corte-Real resulted in his death. Only one of his ships returned to Lisbon, and his brother who went in search of him the following year was never heard from again. These expeditions, however, had one substantial value. Reports of the great new fishing-grounds of the North Atlantic Coast, which they brought home, resulted in a fleet of fishermen from England, Portugal, and the Basque and Breton provinces coming out to these waters. Some of these are believed

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to have gone northward as far as Hudson Bay, but they were fishermen, not discoverers, and have left no record of exploration.

The idea of a passage to India by way of the North Pole was suggested by Robert Thorne, a merchant of Bristol, in 1527. When the plan was placed before Henry VIII., of England, he was quick to act upon it, despatching in May of that year "two fair ships well manned and victualed, having in them divers cunning men to seek strange regions." This expedition, consisting of two ships, the *Mary of Guildford* and the *Sampson*, was without any practical result. The *Sampson*, it appears, was lost in a storm; while the other vessel, though she touched at Newfoundland, added nothing to our knowledge of that country, and returned to England about five months after her departure. A few years later another expedition was sent, which consisted of three vessels under the command of Sir Hugh Willoughby in the *Bona Esperanza*, a vessel of 120 tons, carrying thirty-five men. The other ships were the *Edward Bonadventure*, 160 tons, carrying fifty men, and commanded by Richard Chancellor and Stephen Burrough, and the *Bona Confidentia*, with twenty-eight men. Towards the middle of July the coast of Norway was sighted, and all went well for the next two

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months. Then, about the middle of September, a furious storm drove the ships apart off the Lofoten Islands, the *Edward Bonadventure* parting company with the other two ships, which ultimately found a refuge for the time being in a deadlocked harbor on the coast of Russian Lapland.

Their perils, however, were by no means at an end. The winter was setting in with severity, and it was not long before Willoughby and his men were suffering the most acute hardships. Death at last came to release them from their sufferings, the commander and the sixty-two men who accompanied him all perishing. The ships, with the bodies of the crews, were found in the following year by a party of Russian fishermen.

The third vessel of the expedition, the *Edward Bonadventure*, commanded by Chancellor, fared better. After the storm which had separated her from the other ships had passed, Chancellor stood by in the hope of the companion ships making their appearance. But when, after a stay of seven days, there were no signs of the missing ships, the *Bonadventure* pushed on, sailing to Archangel, on the White Sea. Hearing of the arrival of the Englishmen, the Czar invited them to his court at Moscow, where they were treated with every hospitality,

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and where a treaty was concluded giving freedom to trade to English ships.

It was not long before this hardy seaman was again absent from England on a northern expedition. With a commission from Queen Mary for the opening up of commercial relations with Russia, Chancellor sailed from England on a voyage of adventure. He reached Novaya Zemlya, which had been sighted by Willoughby three years earlier, and made the discovery of the Kara Strait. He arrived at Archangel in safety, but on his homeward voyage the *Bonadventure* was wrecked, and Chancellor and most of his crew perished.

II

THE SEARCH FOR THE NORTH- WEST PASSAGE

WHEN Columbus set sail westward, his real object was to find a new route to India; and so firmly was this idea lodged in his mind that the natives of the land which he discovered were called "Indians," because they were believed to be inhabitants of that country.

Later still, when the Pacific Ocean was sighted, on the other side of the new continent, seamen became all the more eager to reach India and China. The southern routes, east by the Cape of Good Hope, and west by Cape Horn, were long and perilous. The prize which they now sought was a *Northwest Passage*. We find the old records of that day teeming with allusions to this route.

One of the foremost navigators to attempt the Northwest Passage was Martin Frobisher. "Being persuaded of a new and nearer passage to Cataya" (China) he "determined and resolved with himself, to go make full proof thereof, or else never to return again, knowing this to be the only thing of the world that was

yet left undone, whereby a notable mind might be made famous and fortunate." For fifteen years he vainly sought funds for the support of his enterprise. At last the Earl of Warwick was aroused, and he in turn appealed to Queen Elizabeth. The appeal needed to go no farther. The great queen interested herself promptly in anything that promised to enhance the glory of her reign—and at her instance the Muscovy Company issued a patent to Frobisher, and the merchants of London found the money for the enterprise.

Frobisher finally set sail with three small vessels and a total crew of thirty-five men. The smallest of the fleet, a pinnace of ten tons, was lost. After more than a month of sailing, land was sighted but could not be approached on account of ice. It was the eastern coast of Greenland, but Frobisher mistook it for Finland, of which a fictitious account had been published, which had reached England. Here the *Michael*, Frobisher's second ship, left him secretly, fearing to fare further on account of the vast ice pack, "and returned home with great report that he was cast away." The fearless Frobisher continued to sail due northwest in the *Gabriel* alone, although his ship had become almost dismasted by the gales.

He next sighted a bold headland which he

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named for his patron, Queen Elizabeth's Foreland. This was afterwards identified as the southern coast of Baffin Land, latitude 62° N. Here the ice barrier was again defiant, but he worked his way through finally, and reaching the coast found an inlet which he took to be the strait leading to the Northwest Passage, and in commemoration of his supposed triumph he gave it his own name. In the maps to-day and for all time it stands as Frobisher Bay. The intrepid voyager's provisions were by this time exhausted. A further exploration of the inlet resulted in the loss of the ship's boat and five men of his precious small crew.

Frobisher returned home, only to find that further adventure awaited him. Some specimens of a dark, heavy stone which he brought back among his other trophies were eagerly seized on by speculative minds as containing gold ore. A gold-fever spread in London and for the moment all thoughts of the Northwest Passage were cast aside. Much larger expeditions than Frobisher's original one were sent out for each of the two years following. The third expedition, in 1578, consisted of fifteen vessels, carrying one hundred colonists to settle the new Eldorado. But the dream was never fulfilled. Leading the expedition, Frobisher reached Hudson Strait which he mistook for the inlet he

had first discovered. That he was all wrong in his reckoning he soon found out. However, being as hardy a mariner as ever sailed these difficult seas, he kept on his course and came to an open sea westward—which looked so propitious that his soul was again heartened. There was no land—even no ice—and again the vision of the Orient arose to tempt him. This was the open way at last to the great “Mare del Sur” (Pacific Ocean) and “Cataya” (China). He was sorely tempted to cast loose and try his fate, but he was an Englishman and his first duty was to his employers. He must seek the “gold-lands,” which he at last found and his vessels came home, loaded with ore which proved comparatively worthless, and the colonization scheme was abandoned.

George Best was one of Frobisher’s lieutenants who seems to have been very much in his confidence. He accompanied him on all three voyages and wrote a short account of them as they are presented by the Hakluyt Society. They give in lively style the very color and temper of the adventure by sea of that period, and we cannot possibly do better by our readers than to quote from them. Writing of the second voyage, Best records, “After we had provided us here (the Orkney Islands) of further matter sufficient for our voyage, the 8th of

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June we set sail again, and passing through Saint Mangus's Sound, having a merry wind by night, came clear and lost sight of all the land, and keeping our course west northwest by the space of two days, the wind shifted upon us, so that we lay in traverse on the seas with contrary winds, making good as near as we could our course to the westward, and sometimes to the northward, as the wind shifted. And hereabouts we met with the sail of English fishermen from Iceland, bound homeward, by whom we wrote our letters to our friends in England. We traversed these seas by the space of twenty-six days without sight of any land, and met with much drift-wood and whole bodies of trees. We saw many monstrous fishes and strange fowls which seemed to live only by the sea, being there so far distant from any land. At length God favored us with more prosperous winds; and after we had sailed four days with good wind in the poop, the fourth of July, the *Michael*, being foremost ahead, shot off a piece of ordnance and struck all her sails, supposing that they descried land, which by reason of the thick mists, they could not make perfect. Howbeit, as well our account as also the great alteration of the water, which became more black and smooth, did plainly declare we were not far off the coast.

“Our General sent his master aboard the *Michael*—who had been with him the year before—to bear in with the place to make proof thereof, who descried not the land perfect, but saw sundry huge islands of ice, which we deemed to be not past twelve leagues from the shore. About ten o’clock at night we made the land perfect, and knew it to be Friesland. And the height being taken here we found ourselves to be in the latitude of sixty degrees and a half, and were fallen with the southernmost part of this land.”

As already stated, this was not Friesland. But whether they found the country they supposed or not, the account of their further experiences here is very entertaining reading.

“This coast seemeth to have good fishing,” Best continues, “for we, lying becalmed, let fall a hook without any bait, and presently caught a great fish called a halibut, which served the whole company for a day’s meat, and is dangerous meat for surfeiting. And sounding about five leagues off from the shore our lead brought up in the tallow, a kind of coral, almost white, and small stones as bright as crystal: and it is not to be doubted that this land may be found very rich and beneficial if it were thoroughly discovered, although we saw no creature there but little birds. It is a marvelous thing to be-

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hold what bigness and depth some islands of ice be here, some seventy, some eighty fathoms under water, besides that which is above, seeming islands more than half a mile in circuit.

“We found none of these islands of ice salt in taste, whereby it appeareth that they were not congealed of the ocean sea-water which is always salt, but of some standing or little-moving lakes, or great fresh waters near the shore, caused either by melted snows from the tops of mountains, or by continual access of fresh rivers from the land, and intermingling with the sea-water—bearing yet the dominion by the force of extreme frost may cause some part of salt water to freeze so with it, and so seem a little brackish; but otherwise the main sea freezeth not, and therefore there is no *Mare Glaciale*, or Frozen Sea, as the opinion hitherto hath been.

“Our General proved [attempted] landing here twice, but by the sudden fall of mists to which this coast is much subject, he was like to lose sight of his ships; and being greatly endangered with the driving ice along the coast, was forced aboard and fain to surcease his pretence till a better opportunity might serve. And having spent four days and nights sailing along this and, finding the coast subject to such bitter cold and continual mists, he deter-

mined to spend no more time therein, but to bear out his course towards the straits called Frobisher Straits after the General's name, who being the first that ever passed beyond fifty-eight degrees to the northwards, for anything that hath been yet known of certainty, of Newfoundland, otherwise called the continent or firm land of America, discovered the said straits this last year 1576."

Having finally come into the region where the supposed gold ore which they had set out to gather existed, Best records: "Upon the 18th of July our General, taking the gold with him attempted to go on shore with a small rowing pinnace, upon the small island where the ore was taken up, to prove whether there was any store thereof to be found; but he could not get in all that island a piece so big as a walnut. But our men which sought the other islands thereabouts found them to have good store of the ore: whereupon our General with these good tidings returned aboard about ten o'clock at night, and was joyfully welcomed of the company with a volley of shot."

The next attempt to find the Northwest Passage, was made by John Davis, who is characterized "as one of the most scientific seamen of that age," and after whom Davis Strait is named—which he devoutly believed to lead to

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the true Northwest Passage. He made three voyages in three successive years under the patronage of the London merchants, which were productive of much in the way of exploration. Sailing from Dartmouth with two ships, he sighted, "the most deformed, rocky and mountainous land that ever we saw." He promptly called it on his charts the Land of Desolation, although he knew it was Greenland—its eastern coast. Sailing for the west coast Davis anchored in latitude $64^{\circ} 10'$ near Gotthab, as the settlement made there by the Danes afterwards was called. Here he rested awhile and cultivated intimate relations with the Eskimos, who had been generally neglected, as of small account, by other explorers. He then crossed the water which now bears his name and coasted along the western shore till he came to Cumberland Sound, where he was obliged to turn back on account of shortness of supplies and contrary winds; but he fully believed that he had at last found the right track.

Davis started out again the following year, this time with four ships. The chief record of this voyage is that he traced the western shore of Davis Strait still further southward—and reached the coast of Labrador.

On his third voyage in 1587, which he probably realized would be his last unless he actually

found his way to China, he adventured boldly in a small pinnace far up the west coast of Greenland reaching $74^{\circ} 42'$ North. Here he reports there was "no ice towards the north, but a great sea, free, large, and very salt and blue and of unsearchable depth." He was prevented by contrary winds from exploring it, but sailing into Cumberland Sound found there was no passage that way, as a previous voyage had led him to hope. Sailing south he came to Labrador expecting to find the two larger vessels of his fleet awaiting him there, but they had already sailed. Here he struck a sunken rock which nearly wrecked his small craft, but he managed to get back across the ocean to England. He never wavered in his belief that in Davis Strait—as it was named in memory of his heroic efforts—he had found the way to the Northwest Passage, but he could get no support for another voyage. Davis Strait had, in fact, been long found out and was well-known to the Norsemen—but they were merely a race of sea-rovers, who with all their hardihood never pursued an adventure to a profitable conclusion for the rest of the world.

The voyage of William Baffin, in 1616, was memorable. After a cruise full of hardship and peril, he succeeded in pushing further to the northwest than any of his predecessors. He

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did not discover the Northwest Passage, but he did place upon the map that great landlocked body of water known as Baffin Bay.

Before him, however, another bold adventurer, Henry Hudson, had set sail for the western seas. His tragic story deserves a chapter of its own.

III

THE FATE OF HENRY HUDSON

HENRY HUDSON, one of the bravest of English explorers, started on his first expedition to polar seas in 1607. He set sail on board the *Hopeful*, with only ten men and a boy for crew, to discover the North Pole, in hope that by sailing across the polar seas he might make his way to the "islands of spicery" (Japan). He was baffled in his effort by ice at the north of Spitzbergen; but his voyage was not without its results, for his reports of the whales observed in these frozen seas brought about the beginnings of the great whale industry.

Hudson sailed the next year, to seek a passage between Spitzbergen and Novaya Zembla, but, finding his way blocked, he was forced to return within a few months. In 1609 he sailed in search of the Northwest Passage, and in the course of his voyage discovered the noble river emptying into New York Bay, to which his name was given. His fourth enterprise proved to be his last. He was sent out, on board the *Discovery*, to continue his search for the Northwest Passage. The accounts of this voyage,

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during which he entered the great bay that now bears his name, and explored some parts of the coast of Labrador, make one of the most tragic chapters in the whole history of exploration.

When the *Discovery* was upon the eastern shores of Iceland, Hudson began to discover that, unfortunately, he had about him some dissatisfied men. Juet, the mate, had been speaking lightly of the enterprise, discouraging the men, and trying to destroy their confidence in Hudson. He had been calling up their fears by telling them of dangers of the voyage; he even had urged two of the men "to keep their muskets charged and swords ready in their cabins, for there would be bloodshed before the voyage ended," and talked boldly about turning the head of the ship homeward.

However, Hudson sailed from Iceland, and kept his course northwest for the American continent. As he passed across Davis Strait he continually met floating ice mountains that always endangered, and sometimes obstructed, his progress. One of these overturned near the ship, and taught him to keep farther from them; but while struggling to avoid one he would meet another, and the farther he went they seemed to him to grow more "numerous and terryfying." Still, by perserverance and skill he managed to reach a bay (supposed to

be near the great strait that now bears his name), when a storm overtook him. The ice drove so rapidly against the ship that Hudson was forced, as his only chance of escape, to run her into the thickest of it, and there leave her.

After the storm ceased, they set to work to release themselves from the ice. Yet the more they labored the worse their situation became, until at last they could proceed no farther. Hudson's heart sickened, for as he cast his eyes again and again upon the desolate scene there seemed no possibility of escape. His courage kept up, though he afterwards confessed to one of the men that he feared he would never escape, but was doomed to perish there in the ice. His crew, however, saw no sign of fear in him, for he carried a cheerful countenance, while they were dismayed and broken-spirited.

Calling the crew to his cabin he showed them by his charts that they had passed three hundred miles farther than any had been before, and gave them their choice, whether they would proceed or turn back. The men could come to no decision; some were for proceeding, some for returning. The great majority of them did not care where they went, provided they were clear of the ice.

Hudson already knew that he had a mutinous set of men, and that they themselves scarce-

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ly knew what they desired, but this was no time to resent their words and punish them. His object was to pacify them. He, therefore, reasoned with them, trying to allay their fears, rouse their hopes, and inspire them with courage, until at length they all again set resolutely to work to bring the ship from the ice and save themselves. After much labor they succeeded in turning her round. They worked their way little by little, until at length they found themselves in a clear sea, and kept on their course northwest.

Hoping that the long-sought passage was clear before him, Hudson sent a number of men on shore at the point of land he had named Cape Digges, in honor of one of the members of the company which had employed him. He instructed them to climb the hills that they might see the great ocean beyond the strait, but a thunderstorm prevented them from completing their exploration.

With some difficulty they returned to the ship, for a fog had risen upon the water, and Hudson found it necessary to fire two guns that they might know where he was. They told of what supplies they had found, and when the storm was over tried to persuade the master to remain here a day or two while they went ashore again and provisioned the ship. But

Hudson would listen to no such request. He could suffer no delay, for he felt almost certain that his way was clear before him, and burned to press onward. Again he sent some of the men ashore, to see if they could make out the ocean beyond. They returned, reporting that the sea was open to the south. Pressing on, he entered the sea, and, continuing his course south, was ere long at the southern extremity of it. It proved to be only a part of the great inland sea—Hudson Bay—upon which he was voyaging; and, disappointed to find that he could proceed no farther in this direction, with a sad heart he prepared to retrace his course northward.

It was September before Hudson moved north again, and he spent the whole of this and the next month in exploring the great bay, still longing for his western passage. Early in November they began to search for a proper place where they might shelter themselves for the winter. In a little time they found what they thought a suitable position; the ship was brought there, and hauled aground. By the 10th they found themselves shut up for the season; hard freezing weather had set in, and the ship was completely fastened in the ice.

Two hardships were distinctly before them: the rigors of a northern winter, and a scanty

supply of provisions; for the ship had been stored with provisions only for six months. Their only hope, therefore, was to take care of what they had, to get what they could in the neighborhood, and have patience till the spring, when they might reach Cape Digges, and then probably obtain supplies. Hudson prudently commenced at once putting the men on allowance, and then, to encourage them to industry in procuring other provisions, offered a reward to every man who should kill a "beast, fish, or fowl."

With the advance of winter they suffered severely from the cold, the men from time to time having their feet frozen and being thereby rendered lame. But in the way of provisions they fared for a while much better than they had expected. For three months they found abundance of white partridges around them, and killed of these more than a hundred dozen. When spring came they were visited by other fowl, such as swans, geese, and ducks; but before the ice broke up these too began to fail, and starvation now drove the voyagers to sad extremities. They went climbing over the hills and wandering through the valleys, in search of anything that might satisfy hunger. They ate the moss on the ground, and every frog that could be found.

At last the ice broke up sufficiently to enable them to make up a fishing party and try their skill with the net. On the first day they were very successful. They caught five hundred fish, and began to think their sorrows at an end, so far as food was concerned, but they were doomed to disappointment, for on no day after did they take "a quarter of that number."

By this time two of the men were so dissatisfied that they plotted to steal the boat, push off, and shift for themselves. But Hudson called for the boat himself, and their plot failed. He had perceived the woods on fire at the south for some time, and fancied that, if he could reach them, he might find some of the people and obtain provisions. Accordingly, he made ready the boat, took in eight or nine days' provisions, and leaving orders that the crew should take in wood, water, and ballast, and have everything in readiness for his return, he departed. His voyage proved profitless; ere long he came back disappointed and tired, for though he could come near enough to see the people setting the woods on fire, he could never reach them.

The men now prepared to depart from their cold winter quarters. Before he weighed anchor, Hudson, with a sad heart, "distributed among the crew the remnant of provision,"

about a pound of bread to each man, "and knowing their wretched condition, and the uncertainty of what might befall, he also gave to every man a bill of return which might be showed at home, if it pleased God that they came home, and he wept when he gave it to them."

In early summer they hoisted sail. Unfortunately, in three or four days they found themselves surrounded by ice and were forced to cast anchor. They were detained at their anchorage amid the ice for nearly a week, and it was during this time that signs of mutiny began again to appear among the crew.

They finally decided to take Hudson and all the sick, place them in the boat, set it adrift, and then shift for themselves. In vain did one of the crew plead with them, pointing out the blackness of this intended crime. He reminded them also of their wives, their children, and their country, from which they would cut themselves off forever by the deed; but all to no purpose, they were fully bent upon it. Despite his pleas, Hudson was seized and securely bound. The boat was hastily hauled alongside, the sick and lame were called up from their berths and ordered to get in, and provisions for two days were put aboard. Hudson was then thrust into the boat, and his son John was thrown in after

him. The anchor was weighed, the sails hoisted, and with a fair wind they stood eastward, dragging the boat at the stern. When they had nearly cleared the ice, they cut the rope, and the boat was adrift, at the mercy of the ice and sea, till death, in what form no one knows, came to end the sufferings of the unfortunate inmates. Nothing was ever learned of the fate of poor Hudson, one of the most intrepid of the early voyagers.

IV

A LAND EXPEDITION

THE disasters which followed one after another did not curb the ambitions of daring seamen who felt the call of the frozen North. In their frail and tiny vessels they fearlessly looked death in the face, for they were of the stuff of which heroes are made. That they made such hazardous voyages in small barks fills us with surprise. The famous voyage of William Baffin, in 1616, in which the bay bearing his name was discovered, was performed in a vessel of only fifty-five tons burden; that of Hudson was made in the very same vessel; and the voyages of Davis were made chiefly in vessels of fifty tons or less.

During the seventeenth and eighteenth centuries many attempts were made to find a Northwest Passage, remarkable chiefly for their heroism. We know now that the open sea around the North Pole, so long and so persistently sought after, does not exist. But with our greater knowledge we do not forget the dauntless men who led the way into the desolate wastes of snow and ice, and as long as history continues to be written the memory

of their daring deeds will never die. We cannot turn from this record, however, without chronicling the story of Samuel Hearne, who tried to solve the riddle by going across country on foot. A reward of twenty thousand pounds had been offered by the British Government for the discovery of a route to the Pacific through Hudson Strait. Hearne, who must have been a great dreamer or he would never have attempted the feat, actually started, in 1771, to find the Passage on foot.

Hearne was an English midshipman who came into America and entered the Hudson Bay Company's service, and showed so much capacity, that at twenty-three he was sent on an exploring tour by water to the north of Hudson Bay. The mission was a success, and the following year he was sent on a bigger enterprise—a great land voyage of discovery and exploration to the northwest, with the Northwest Passage as its objective. His four companions dragged a single sledge full of supplies. There is no record that they used dogs. Starting from Fort Churchill on Hudson Bay they blazed a trail across the treeless waste now called Mackenzie which skirts the Arctic Circle. In summer this land bears a thin coating of grass, and in winter, which is nine months long, it is covered with unending snow. The

only inhabitants were stray groups of Eskimos and a few Indians. Occasional herds of caribou were Hearne's chief dependence for food, as indeed they are of all travellers through the Arctic wastes. His chief danger lay not so much in starvation as a violent death at the hands of either Indians or Eskimos, who were at that time in perpetual warfare. He did not dare to hire a guide from either side.

Starting in the late spring with the first signs of breaking weather, the party had reached Lake Dubawnt, two degrees below the Arctic Circle, by the end of summer. During the first night's camp here the snow fell four inches, and the next morning the pair who had kept watch were found frozen stiff, and only restored after long labors. A blinding snow-fall continued during the day in which the travellers kept on, believing they must be near the first objective, the mouth of the Coppermine River, which was in fact still six hundred miles away. They had brought no tent, having settled on camping in the open, a decision which they bitterly regretted the first night after the early and unexpected storm broke. It continued that night and they were obliged to sleep under the sledges as a sort of lean-to, first having cleared a patch of ground underneath of snow. In the morning, confronted by a sea of

boundless white, Hearne's companions lost their heads and insisted on a return, and their leader at last consented to guide them back. They retreated to Fort Prince of Wales, one of the company's posts, where they spent the winter, and with the first signs of open weather, Hearne was off again. By July, he had reached the 65th parallel. A little later as the short summer waned, his followers again lost heart and turned on him. Hearne administered a lesson in the shape of a good thrashing to the leader, and on awaking the next day found his arms, his sledge and his men all gone. He started after them but their tracks were soon lost in a fresh snowfall. They had left him with two days' provisions, and he kept on till he reached a friendly Indian camp which he found deserted. He was now alone in a trackless waste without arms or provisions, exposed to any danger that could be conceived. He had his compass, and with this and his knowledge of sea navigation, he stumbled on for days in the direction of Fort Prince of Wales. In his own account he states that he "fasted whole days and nights, twice upwards of three days, once near seven days, tasting nothing the while but a few cranberries, water, melted snow or ice, scraps of leather and burnt bones." When he reached the Fort he was a

skeleton, hardly able to stand. But his first declaration was, "I shall go back next year, if I die by the way".

The next spring he started forth from the gates of the fort alone—and by the end of August had got as far as the camp where his followers had deserted him. Near here he met friendly Indians who not only supplied him with food in the shape of caribou meat and moss, but were willing to guide him to the Coppermine which he finally reached, and in less than a week thereafter he stood, as he believed, on the shore of the Arctic Ocean. No land save the coast on the northeast side of the gulf was visible. On the snow were scattered the bones of seals and whales. There could be but one conclusion, Hearne told himself, He had at last discovered the "Hyperborean Sea"—farthest limit of the north of America; and all his troubles and hardships, and his thirteen-hundred mile walk seemed as nothing. Hearne turned back from this point reaching Fort Prince of Wales after four years altogether in the Arctic wastes.

The great pathfinder, Mackenzie, showed later that Hearne had only reached Coronation Gulf, as it is now called, and was yet four hundred miles from the Arctic Ocean. But his name will live as one of the earliest and most intrepid

of the Hudson Bay Company's explorers, and the first man who set forth with the great vision of trying to discover the Northwest Passage by land.

V

THE FIRST USE OF SLEDGES

THE early years of the nineteenth century witnessed a great revival of interest in Polar research. Much of the awakened interest in the search for the Northwest Passage was due to Captain Scoresby, the able and scientific master of a whaling-ship. His published account of the Greenland seas drew the attention of all Europe to that quarter, and the British Government was roused to undertake a new series of enterprises. Four stout vessels were selected, and were strengthened to resist the shocks and pressure of the ice in a manner which had never before been attempted.

Two of these, the *Dorothea*, commanded by Captain David Buchan, and the *Trent*, under Lieutenant John Franklin, sailed in 1818, with instructions to proceed northward by way of Spitzbergen, and to endeavor to cross the Polar Sea. The other two, the *Isabella*, under the command of Captain John Ross, and the *Alexander*, commanded by William Edward Parry, were appointed to perform their voyage of discovery through Davis Strait. Ross and Parry,



SIR JOHN FRANKLIN.

as a result of these explorations, were able to confirm the accuracy of the observations made two hundred years before by Baffin.

Parry sailed once more in 1821, with the *Fury* and the *Hecla*, under instructions to proceed westward through Hudson Strait. He reached Hudson Strait in the following July, and anchored in Repulse Bay, from which no passage to the west could be found. Under these circumstances it was decided to winter near Lyon's Inlet, and there the ships remained till July of the following year.

After encountering many dangers, the expedition arrived at a strait to which Parry gave the name of the Fury and Hecla, and which he believed to be an opening into the Polar Sea. Winter again found the vessels in these frigid quarters, and for a second time the expedition was frozen up. When summer came the explorers were able to find a passage out, and reached England towards the end of 1823.

Still obeying the call of the North, Parry once again set out in 1824, with the same ships. This time he was less fortunate. In a great storm the *Fury* was abandoned, and only the *Hecla* returned to England.

These expeditions demonstrated beyond all doubt that the dream of sailing direct to the North Pole must be forever given up, as the

sea, blocked with eternal ice, offered no passage that led to the desired goal. After a certain point had been reached by water, farther progress over the ice must be made by means of sledges.

Convinced of the possibility of such a plan, Parry put it into execution in 1827, inaugurating, by so doing, a new era in Arctic exploration. Sailing to Spitzbergen in the *Hecla*, Parry started from the north end of the group with two flat-bottomed boats on runners to begin his journey to the Pole. Each boat carried fourteen men, and in crossing the ice the commander preferred to travel by night rather than by day.

After sailing over the water for two hundred miles, the boats were dragged over ice-floes for nearly one hundred miles, a feat that involved considerable hardship, for the ice was rough. Undaunted by these difficulties, however, the expedition pushed ahead, attaining at last 82° 40' 30" of northern latitude, the highest point hitherto reached by man, and one which, for a long time to come, was to remain the "farthest north."

Parry would have gone still farther, had it not been "that the current which set continuously to the south carried back the boats during the hours allotted to the repose of the crews;

thus the daily advance, notwithstanding great exertion, was consequently small."

His journal gives us a graphic account of the daily life of the crew. Parry, like others of these hardy voyagers, was noted for his piety: "When we rose in the evening we commenced our day by prayers, after which we took off our fur sleeping-dresses, and put on those for travelling; the former being made of camlet lined with raccoon-skin, and the latter of strong blue box-cloth. We made a point of always putting on the same stockings or boots for travelling in, whether they had dried during the day or not; and I believe it was only in five or six instances at the most that they were not either still wet, or hard frozen. This indeed was of no consequence beyond the discomfort of first putting them on, as they were thoroughly wet in a quarter of an hour. On the other hand, it was of vital importance to keep dry things for sleeping in. Being 'rigged' for travelling we breakfasted upon warm cocoa and biscuit, and after throwing the things in the boats and on the sledges we set off on our day's journey and usually travelled from five to five and a half hours, then stopped an hour to dine, and again travelled forth, five even six hours according to circumstances."

This, be it remembered, was the first journey

in the effort to reach the Pole over the ice by men and sledges. Parry was the pioneer in the only practical way, as Peary (whose name is so akin to his) afterwards proved.

“After this,” he continues, “we halted for the night, as we called it, though it was usually early in the morning, selecting the largest surface of ice we happened to be near for hauling the boats on to, in order to prevent as far as possible the danger of its breaking up, and also to prevent drift. The boats were placed close alongside each other with their sterns to the wind, the snow or water cleared out of them, and the sails supported by the bamboo masts and three paddles placed over them as awnings, an entrance being left at the bow. Every man then immediately put on dry stockings and fur boots, after which we set about any necessary repairs of any sort. Most of the officers and men then smoked their pipes, which served to dry the boats and awnings very much, and usually raised the temperatures of our lodgings ten to fifteen degrees. This part of the twenty-four hours was often a time, and the only one, of real enjoyment to us. The men told their stories and fought all their battles o’er again, and the labors of the day, unsuccessful as they too often were, were forgotten. A regular watch was set during our resting-time to look

out for bears, or for the ice breaking up round us, as well as to attend to the drying of the clothes, each man alternately taking the duty for one hour. We then concluded our day with prayers, and having put on our fur dresses lay down to sleep with a degree of comfort which perhaps few persons would imagine possible under such circumstances. Our chief inconvenience was that we were somewhat pinched for room and therefore obliged to stow rather closer than was altogether agreeable. The temperature while we slept was usually from thirty-six to forty-five degrees according to the state of the external atmosphere. After we had slept seven hours, the men appointed to boil the cocoa roused us, when it was ready, by the sound of a bugle, when our day began again."

It may help us to understand better the courage and fortitude involved in these explorations, if we glance at some of the remarkable effects of cold, as related in the journals of other Polar navigators.

Captain Scoresby, in his story of the Arctic regions, tells us that when wintering in Hudson Bay, Captain James experienced such cold that many of the sailors had their noses, cheeks, and fingers frozen as white as paper.

Ellis, who wintered in the same region, found bottled beer, though wrapped in tow and placed

near a constant fire, frozen solid. Many of the sailors had their faces, ears, and toes frozen; glasses used in drinking stuck to their mouths, and sometimes removed the skin from the lips or tongue.

Sir John Franklin tells us that one evening "we found the mercury of our thermometer had sunk into the bulb and was frozen. It rose again into the tube on being held to the fire, but quickly redescended into the bulb on being removed into the air. We could not, therefore, ascertain by it the temperature of the atmosphere, either then or during our journey." A still more astonishing example of the effect of the cold is given by him. Fish that had been frozen alive recovered their animation when thawed before the fire; and mention is made of a carp which "recovered so far as to leap about with much vigor, after it had been frozen for three hours."

Other peculiarities of these regions may be noted in passing. Scurvy was a very alarming disease, and many explorers perished by it. Sudden storms had also to be guarded against. Captain Scoresby tells us that on one occasion his father, while navigating the Greenland Sea, landed on the coast. The day being particularly fine, he ascended a considerable elevation, the summit of which was not broader than a

common table, and which on one side was as steep as the roof of a house, and on the other formed a precipice. Engaged in admiring the extensive prospect, he scarcely noticed the advance of a very small cloud. Its rapid approach at length excited his attention. When it reached the place where he was seated, a torrent of wind assailed him with such violence that he was obliged to throw himself on his body, and stick his hands and feet into the snow, to prevent himself from being hurled over the tremendous slope which threatened his instant destruction. The cloud having passed, the air, to his great satisfaction, became calm, when he immediately descended by sliding down the surface of snow, and in a few minutes reached the base of the mountain in safety.

The temperature during the open months is subject to violent changes. Hood records that on the 15th of March the thermometer fell in the open air to fifteen degrees below zero, and rose on the following day to sixty above. It was first observed on this expedition that frogs, fish and even insects as small as mosquitoes frozen lifeless would revive on being submitted to heat. Hood gives a vivid account of the mosquitoes, that pest of the explorer in all climes: "We had sometimes before procured a little rest by closing the tent and burning wood or

flashing gunpowder within, the smoke driving the mosquitoes into the crannies of the ground. But this remedy was now ineffectual, though we employed it so perseveringly as to hazard suffocation; they swarmed under our blankets, goring us with their envenomed trunks and steeping our clothes in blood. We rose at daylight in a fever, and our misery was unmitigated during our whole stay.

“The food of a mosquito is blood, which it can extract by penetrating the hide of a buffalo, and if it is not disturbed it gorges itself so as to swell its body into a transparent globe. The wound does not swell like that of the African mosquito, but it is infinitely more painful; and when multiplied a hundredfold and continued for so many successive days, it becomes an evil of such magnitude that cold, famine, and every other concomitant of an inhospitable climate must yield precedence to it. It chases the buffalo to the plains, irritating him to madness; and the reindeer to the seashore from which they do not return till the scourge has ceased.”

Captain Buchan records that he “observed myriads of insects frozen on the surface of a lake in Newfoundland and embedded in the solid ice. The next day by the powerful rays of the sun they were loosened from durance, became reanimated, and took their flight into air.”

VI.

FRANKLIN AND HIS TRAVELS

THE central figure in Arctic exploration in the first half of the nineteenth century was that of Sir John Franklin, who devoted himself to the cause of research with an enthusiasm that ended only with his tragic death in the icy wilderness. Easy and pleasant paths had for him no attraction; and when the Magic North, with its fascinating dangers, stretched out to him its beckoning hand, he answered the call and set sail for the Polar Sea.

His career as an Arctic explorer began in the year 1818, when he accompanied Captain Buchan into the Polar Sea, with the object of discovering the North Pole. But in consequence of an accident to one of the two vessels forming the expedition, a return was made to England before anything in the nature of discovery had been accomplished.

Franklin's opportunity came in the following year. The Government had determined upon sending an expedition from the shores of Hudson Bay by land, to explore the northern coast of America from the mouth of the Coppermine River to the eastward. Captain Franklin,

having been placed in charge of the expedition, sailed in May, 1819, in the *Prince of Wales*, a ship belonging to the Hudson Bay Company. The small party included Dr. Richardson, an eminent scientist, and Lieutenant Back, who had already served with Franklin in the navy.

Arriving at York Factory in Hudson Bay, the expedition set out from there in September, with portable boats or canoes. The intention was to follow the line of rivers and lakes, beginning with the Nelson and the Saskatchewan, and ending with the Slave and the Coppermine.

Reaching Cumberland House, a long-established station on the Saskatchewan, Franklin received his first setback. According to the arrangements made in advance, he had expected to find there sufficient supplies, together with guides and hunters. But disagreements between the rival trading companies had interfered with the plans, and thus the expedition was faced with a grave difficulty at the very outset. There was nothing for it but to form new plans.

As farther progress at that season was impossible, it was decided that the main party, with Dr. Richardson, should pass the winter at Cumberland House; while Franklin, accompanied by Back and a seaman of the name of Hepburn, should push northward to Fort Chipewyan, on

the shore of Lake Athabasca, a distance of 857 miles.

Leaving Cumberland House in December with two small dog-sleighs and supplies for the journey, they traveled through the worst part of the winter; and after braving many dangers and enduring fearful sufferings, arrived at their destination late in March.

Here they were joined some months later by the remainder of the expedition, which had hurried on as soon as the break-up of the ice in the spring had left a passage that could be navigated by the boats. The expedition was then organized, and, accompanied by interpreters and some Canadian boatmen, left Fort Chipewyan for Fort Providence, on the northern side of the Great Slave Lake.

It was a brave, though disappointed, party that set out from Fort Chipewyan. The two trading companies who disputed the territory, and whose rivalry kept them practically on the verge of war, had again failed to deliver supplies to the expedition. There was little more than one day's provisions in hand when the party started on its weary march. The supply of powder, too, was very scanty, but what they had was put to the best use; and the hunting and fishing yielded sufficient food to satisfy the pangs of hunger.

When they left Fort Providence, the party consisted of twenty-eight men, besides three women and three children. In addition to the three canoes, a smaller one was taken to convey the women. "We were all in high spirits," runs the record of the brave commander, "being heartily glad that the time had at length arrived when our course was to be directed towards the Coppermine River, and through a line of country which had not been previously visited by any European." Soon after starting from the fort, the expedition was joined by a large party of Indian hunters under a chief, Akaitcho, by name.

The hardships of the journey began before the party had traveled any distance. Fort Providence was but a few days behind them when "the issue of dried meat for breakfast this morning had exhausted all our stock; and no other provision remained but the portable soups and a few pounds of preserved meat." On the recommendation of Akaitcho, the hunters were furnished with ammunition and sent on ahead in the hope of finding reindeer; while many of the Indians, being also in distress for food, started on at a quicker pace than the expedition could travel.

The story of these trying days makes sad reading. Starvation was constantly before the

travellers. Entries such as these are to be found in Franklin's diary:

"11th August. Having caught sufficient trout, white fish, and carp yesterday and this morning to afford the party two hearty meals, and the men being recovered from their fatigue, we proceeded on our journey."

"13th August. We caught two fish this morning, but they were small, and furnished but a scanty breakfast for the party."

By this time, however, they were approaching the fires of their hunters, and they were hopeful of relief. Soon the eagerly desired food from the hunters came to appease the cravings of hunger, and for a little while the advance was continued under happier conditions. But another trial was at hand.

Winter set in much earlier than usual. By the 25th of August the pools were already frozen over. "Akaitcho arrived with his party, and we were cruelly disappointed at finding they had stored only fifteen reindeer for us. In the evening of the same day Akaitcho refused to accompany us in our proposed descent of the Coppermine River. He stated that the attempt would be rash and dangerous, as the weather was cold, the leaves were falling, some geese had passed southward, and the winter would shortly set in. He considered that the lives of all who went on

such a journey would be lost, and he neither would go himself nor permit his hunters to accompany us."

Being anxious at all hazards to push on to the sea, and establish himself for the winter at the mouth of the Coppermine, Franklin argued with Akaitcho, who appeared hurt that his counsel should not be accepted.

"Well," replied the chief, "I have said everything I can to dissuade you from this expedition, on which, it seems, you wish to sacrifice your own lives, as well as those of the Indians who might attend you. However, if, after all I have said, you are determined to go, some of my young men shall join the party. It shall not be said that we permitted you to die alone after having brought you hither; but, from the moment they embark in the canoes, I and my relatives will lament them as dead."

In the face of such a remonstrance Franklin had no alternative but to abandon his plans for the time being, and to settle down there for the winter. For ten months the party remained in huts, at a place which came to be called Fort Enterprise. It was a long and weary wait, but it was patiently endured. The provisions running short, Lieutenant Back "volunteered to go and make the necessary arrangements for transporting the stores we expected from Cumber-

land House, and endeavor to obtain some additional supplies from the establishments at Slave Lake. If any accident should have prevented the arrival of our stores, and the establishments at Moose-Deer Island should be unable to supply the deficiency, he was, if he found himself equal to the task, to proceed to Chipe-wyan."

Thinking nothing of the tremendous difficulties and dangers of the long journey across the ice and snow, but only of bringing relief to his famishing comrades, this brave man, accompanied by Wentzel, two Canadians, and two hunters with their wives, left Fort Enterprise in the depth of winter.

Back's account of his hazardous journey is of thrilling interest. Owing to the slow progress made by the wives of the hunters, they were able on the first day to travel only seven and a half miles. On the third day the weather was so extremely hazy that they could not see ten yards in front of them, and the hunters feared they would lose the track of the route. Towards evening it became so thick that they could not proceed.

They continued their journey, sometimes on frozen lakes, and at other times over craggy rocks; and when on the lakes they were much impeded by different parts which were not fro-

zen. It was the 18th of October when Back and his companions left Fort Enterprise, and on the 27th they "crossed two lakes and took a circuitous route, frequently over high hills, to avoid those lakes which were not frozen. During the day one of the women made a hole through the ice and caught a fine pike, which she gave to us. The Indians would not partake of it, from the idea that we should not have sufficient for ourselves. 'We are accustomed to starve,' said they, 'but you are not.' "

Remaining for some time at Fort Providence until the Great Slave Lake should be frozen, they finally set out, being provided with dogs and sledges. It was exceedingly cold, and their journey was frequently hindered by large pieces of ice which had been thrown up by the violence of the waves.

Next day the wind was so keen that the men proposed conveying Back in a sledge, that he might be less exposed; and to this, after some hesitation, he consented. Accordingly a reindeer-skin and a blanket were laid along the sledge; and in these he was wrapped tight up to the chin, and lashed to the vehicle.

In attempting to cross a large opening in the ice, the dogs fell into the water, and were saved with difficulty. "The poor animals," says Back, "suffered dreadfully from the cold, and nar-

rowly escaped being frozen to death. We had quickened our pace towards the close of the day, but could not get sight of the land; and it was not till the sun had set that we perceived land about four miles to our left. It was then so cold that two of the party were frozen about the face and ears. I escaped through having the good fortune to possess a pair of gloves made of rabbit-skin, with which I kept constantly chafing the affected places.

“At 6 P. M. we arrived at the fishing huts near Stoney Island, and remained there the night. The Canadians were not a little surprised at seeing us. They had already given us up for lost.”

Finding that a sufficiency of food could not be provided at Moose-Deer Island, Back determined to proceed to Lake Athabasca. On the route the snow was so deep that the dogs were obliged to stop every ten minutes to rest themselves, “and the weather was so cold that we were compelled to run to keep ourselves from freezing. I was much galled by the strings of the snow-shoes during the day; and once I got a severe fall by the dogs running over one of my feet, and dragging me some distance, my snow-shoe having become entangled with the sledge.

“We had much difficulty in proceeding, owing to the poor dogs being quite worn out, and

their feet perfectly raw. We endeavored to tie shoes on them, to afford them some little relief; but they continually came off when amongst deep snow, so that it entirely occupied one person to look after them. In this state they were hardly of any use amongst the steep ascents, where we were obliged to drag the sledges ourselves. My legs and ankles were now so swollen that it was excessively painful to drag the snow-shoes after me."

After undergoing all these privations, Back and his faithful band arrived at Fort Chipewyan in January. There they waited for several weeks. When they left they took with them four sledges laden with goods for the expedition, and a fifth one belonging to the Hudson Bay Company. By March they reached Fort Enterprise, and had the pleasure of finding the other members of the expedition in good health.

Back and his companions had been absent for five months. In that time they had travelled 1104 miles on snow-shoes, with no other covering at night than a blanket and a deerskin, with the thermometer frequently at forty degrees, and once at fifty-seven degrees, below zero, and sometimes passing two or three days without food.

The winter at Fort Enterprise having come to an end, and the ice having given way suffi-

ciently to permit of the canoes being launched on the Coppermine, Franklin and his party bade farewell to Akaitcho and his Indians. In June, 1821, the party quitted their huts, "sincerely rejoicing that the long-wished-for day had arrived" when they "were to proceed towards the final object of the expedition." Franklin anticipated returning to Fort Enterprise when the winter should compel them to suspend their operations. He therefore arranged with the Indians to lay in a supply of pemmican and other stores; but, as we shall presently see, they failed to fulfill their obligation, with consequences that nearly proved fatal to the entire expedition.

It had already been found that the country between Cape Barrow and the Coppermine River would not supply the wants of the expedition. Franklin determined, therefore, to make at once for Arctic Sound, and entering a river to which he gave the name of one of his companions, Hood, he navigated it as far as was practicable. Then leaving it, they took the large canoes to pieces, and out of their materials constructed two smaller ones which they could carry with them. They also lightened their luggage as far as they could with safety, and started on foot for Fort Enterprise across

the country bearing the forbidding name of the Barren Grounds.

It was a terrible march. Each day was filled with dangers and terrors. That a single member of the party passed through these experiences alive was nothing short of marvellous. "Heavy rain commenced at midnight," reads one of the entries in Franklin's journal, "and continued without intermission until five in the morning, when it was succeeded by snow, the wind soon increasing to a violent gale. As we had nothing to eat, and were destitute of the means of making a fire, we remained in our beds all the day; but the warmth of our blankets was insufficient to prevent us from feeling the severity of the frost.

"There was no abatement of the storm next day; the snow had drifted around our tents to a depth of three feet, and even in the inside there was a covering of several inches on our blankets. Our sufferings from the cold in a comfortless canvas tent in such weather, and without fire, may easily be imagined. Our sufferings from hunger were even greater."

Just as the march was about to be commenced on the following day, the gallant leader was seized with a fainting fit, in consequence of exhaustion and exposure to the wind. After eating a morsel of portable soup, he recovered

so far as to be able to move on. But weak and almost helpless as he was, he "was unwilling at first to take this morsel of soup, which was diminishing the only remaining meal for the party; but several of the men urged me to it with much kindness."

The miseries of the journey never for a moment relaxed. Hunger and cold were the constant companions of the little band of heroes as they struggled on in their wretchedness. "The ground was covered a foot deep with snow," we read; "the swamps over which we had to pass were entirely frozen; but the ice not being sufficiently strong to bear us, we frequently plunged knee-deep into the water. Those who carried the canoes were repeatedly blown down by the violence of the wind, and they often fell from making an insecure step on a slippery stone.

"On one of these occasions the largest canoe was so much broken as to be rendered utterly unserviceable. This was a serious disaster, as the remaining canoe having through mistake been made too small, it was doubtful whether it would be sufficient to carry us across a river. Indeed, we found it necessary in crossing Hood's River to lash the two canoes together. As several of the party were drenched from head to foot, and we were all wet to the middle,

our clothes became stiff with frost, and we walked with much pain for the remainder of the day."

At the close of each day's weary march, "the first operation, after encamping, was to thaw our frozen shoes, if a sufficient fire could be made, and dry ones were put on. Each person then wrote his notes of the daily occurrences, and evening prayers were read. As soon as supper was prepared it was eaten, generally in the dark, and we went to bed. We kept up a cheerful conversation until our blankets were thawed by the heat of our bodies, and we had gathered sufficient warmth to enable us to fall asleep. On many nights we had not even the luxury of going to bed in dry clothes, for when the fire was insufficient to dry our shoes we durst not venture to pull them off, lest they should freeze so hard as to be unfit to put on in the morning."

Coming to the Coppermine River, they looked for a ford, but none could be found. To avoid a long detour, which the party in their weakened condition were not able to face, it was necessary to construct some kind of raft by which they could cross the stream. As willows were growing within easy reach, the prospect seemed favorable enough.

During a halt for the purpose of consider-

ing the subject, the carcass of a deer was discovered in the cleft of a rock into which it had fallen. A fire was kindled, and a large portion of it was consumed on the spot.

Encouraged by this unexpected meal, the men worked with enthusiasm at the construction of a raft; but when launched, it proved less buoyant than had been anticipated, and attempts to cross with it met with repeated failure. The prospect of getting to the other side of the river now seemed hopeless; and again despair fell upon the party.

At this stage, when the outlook appeared so black, Dr. Richardson stepped forward, volunteering to swim across the river with a line, and to haul the raft over. Under any circumstances this undertaking would have been attended with considerable danger; but reduced as he was to a skeleton through want of food and exposure to the cold, the risk was much increased. The brave doctor, however, was prepared to sacrifice his own life, if only he could do something to relieve the sufferings of the others.

Just as he was about to step into the water, he put his foot on a dagger, which cut him to the bone; but this misfortune did not turn him from his heroic purpose. Plunging into the stream, with a line around his body, he struck

out for the opposite shore; but he had got only a short distance from the bank when his arms became benumbed with the cold, and he lost the power of moving them.

Even then he would not confess himself beaten. Turning on his back, he continued to persevere, and had almost reached the other side of the stream, when his legs also became powerless; and, to the consternation of his companions, he began to sink. They instantly pulled upon the line; Dr. Richardson came again to the surface, and was gradually drawn ashore frozen nearly rigid and in an almost lifeless state.

“Rolled up in blankets, he was placed before a good fire of willows; and, fortunately, was just able to speak sufficiently to give some slight directions respecting the manner of treating him. He recovered strength gradually, and by evening was able to be moved into the tent. We then learned that the skin on the whole of his left side was deprived of feeling, in consequence of exposure to too great heat. He did not completely recover the sensation of that side until the following summer.”

The condition of the expedition now seemed more pitiable and hopeless than ever. Hood was reduced to a shadow; Back was so feeble as to require the support of a stick in walking;

while Dr. Richardson suffered from lameness, in addition to his extreme weakness.

At last another raft was constructed. The travellers were drawn, one by one, across the river; and hope revived at the prospect of reaching Fort Enterprise within a few days. Here they expected to find, according to the instructions given to the Indians, a supply of pemmican and other stores awaiting them.

Relief, however, was not so close at hand; and further miseries were to be endured before the end of the terrible journey was reached. To hasten the procuring of relief, Franklin despatched Back, with two of the Canadians, to search for the Indians.

The little party, now reduced to five persons, including Franklin, continued their march to Fort Enterprise, suffering acute agony all the time. "At length," writes Franklin, "we reached Fort Enterprise, and to our infinite disappointment and grief found it a deserted habitation. There was no deposit of provisions, no trace of the Indians, no letter from Mr. Wentzel to tell where the Indians might be found. It would be impossible for me to describe our feelings; the whole party shed tears, not so much for our own fate as for that of our friends in the rear, whose lives depended on our sending immediate relief."

Meanwhile, after prolonged search, Back reached the Indians' camp, and at once started several of the Indians to the fort, giving them only a small supply of provisions in order that they might travel quickly. Back had conducted his search with splendid courage and determination, suffering terrible privations, and subsisting, with his two companions, for several days, upon a pair of leather trousers and a pair of old shoes. One of the men died from exhaustion, and Back and the remaining hunter were reduced to the last extremity when they reached Akaitcho's camp. They were barely able to deliver their message.

The relief which they were able to send to their fellow-sufferers at Fort Enterprise was received with gratitude too deep for words. "Praise be unto the Lord," wrote Franklin in his diary under date of November 7. "We were this day rejoiced by the appearance of Indians, with supplies, at noon."

What remains to be told of this expedition can be put into a few words. Carrying with them further supplies, the Indians reached the fort, and with much kindness nursed and fed the dying men, bringing them back from the mouth of the grave, and guiding them, when a week later they were able to face the journey, to Fort Providence. The winter was spent at

Moose-Deer Island, and England was safely reached in the following October.

“Thus terminated,” wrote Franklin, “our long, fatiguing, and disastrous travels in North America, having journeyed by water and land (including our navigation of the Polar Sea) 5550 miles.”

VII

THE TRAGIC FATE OF FRANKLIN

AFTER an interval of almost twenty years, Franklin ventured once again into the Arctic Circle. The story of this enterprise, which involved not only his death, but also that of all the brave men who accompanied him, is the most tragic and pathetic in the long history of Polar exploration.

The English nation was still very keen to discover the Northwest route to the Pacific and, after an interval, the naval department set about plans for a new venture. Franklin favored the proposal to send another expedition; his old enthusiasm for research in the Polar regions burned as brightly as ever, and he was eager to act as commander. "Let me see, Sir John," said the First Lord of Admiralty to the Arctic veteran; "you are sixty, are you not?" "No, no, my lord," quickly replied Franklin; "only fifty-nine." Soon after this Franklin was appointed to the command of an expedition, and two ships, the *Erebus* and the *Terror*, were commissioned to make a new attempt to find the passage which had lured so many bold seamen into the icy seas.

Sailing in May, 1845, the expedition reached Whale Fish Islands in the early part of July. There a transport ship, which had accompanied the two vessels, parted company with them, carrying back the last letters ever received from the explorers. These were written in the most cheerful spirit. Among them was a despatch from Franklin: "The ships are now complete with supplies of every kind for three years; they are, therefore, very deep, but happily we have no reason to expect much sea as we proceed." On the 26th of the same month, the expedition was seen waiting for a favorable opportunity of crossing middle ice on the way to Lancaster Sound; and then it disappeared into the frozen zone, to find its grave amid the eternal ice.

The absence of news from the ships did not for a time give rise to any alarm, as they carried sufficient provisions to last for three years; and other expeditions, notably that of Sir John Ross, which was locked in the ice for four winters, had been absent for years without being able to communicate with the outside world.

Ross sounded one of the first notes of alarm. He expressed the conviction that Franklin's ships were frozen up at the western end of Melville Island, whence their return would be forever prevented by the ice accumulating behind

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them. It was thought, however, by the Admiralty that the second winter of Sir John Franklin's absence was too early a period to give rise to alarm for his safety. Nevertheless, they invited the opinions of naval officers who had been employed in Arctic expeditions. Their replies were sufficiently alarming to stir the Government into sending relief parties. Thus began a search which for the next ten years was watched with eager interest by the whole civilized world.

It was not from Britain alone that these expeditions were now despatched. America and France also assisted in the search. Party after party, both private and public, numbering altogether about forty, and following each other in rapid succession set out on their mission of mercy, some of them to end in disaster.

It was not till 1854 that any light was shed upon the fate of Franklin and the courageous men who had accompanied him. Returning from a search instituted by the Hudson Bay Company, Dr. John Rae reported having met with a party of Eskimos, who told him that about six years before they had fallen in with a company of white men dragging their boats and sledges over the ice, who by signs communicated to them the fact that their ship had been crushed in the ice. Later on, the Eskimos

had discovered the boats and the graves of many of these men. In proof of their story, they produced silver spoons and forks, which Dr. Rae purchased from them. As these objects had without doubt belonged to the missing expedition, the story of the Eskimos was unhesitatingly accepted in Britain; and Rae and his party received a reward of ten thousand pounds offered for tidings of the expedition.

There seemed little more to learn; but Lady Franklin, brave and patient during her long and trying ordeal, was not yet satisfied. Eager to learn more particulars of her husband's fate, she pressed upon the Government the necessity of following up the traces found by Dr. Rae. But the Government, coming to a conclusion that there was now no prospect of saving life, and that another expedition to the Arctic seas would not be justified, declined to take further steps.

Though disappointed in that quarter, Lady Franklin was determined that still another search should be made, and equipped an expedition at her own expense. Captain McClintock, was invited to the command, and many of his companions in previous Arctic voyages volunteered their services.

The *Fox*, a small steam-yacht of 160 tons, was chartered for the enterprise, and provi-

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sioned for a two years' absence. The Government, although declining to be responsible for the expedition, liberally assisted with supplies. The departure was finally made in the summer of 1857, with Lieutenant Hobson as second in command, and Captain Young, as navigating officer.

It seemed almost too much to expect that where so many other expeditions had failed, the little *Fox* would meet with success; but after being locked up in the ice-pack for eight months, daily in danger of being crushed to pieces, the tiny vessel reached the region that had been the scene of Franklin's imprisonment; and investigations were made respecting the ill-fated expedition.

From the discoveries of Rae and McClintock, it is possible to trace with tolerable accuracy the movements of Franklin and his party from the point at which they disappeared. Grim, indeed, was the tragedy that was at length revealed—the weary imprisonment amid the ice during the long winters of endless darkness and the short summers of continuous light; the hope of relief that never came; the passing away of the gallant old commander before the final catastrophe fell upon his brave men; the abandoning of the ships to their fate; and the toilsome march over the ice in the vain struggle

to escape death—that was the terrible story of the expedition which, full of hope, had sailed from England in 1845.

The first winter was spent at Beechey Island, comfortably enough, no doubt; for, well provisioned as the vessels were, there would be no lack of food. When the summer of 1846 arrived, Franklin attempted to move southward. The two ships struggled bravely among the grinding icebergs of Peel Sound and Franklin Strait, but made little advance against the difficulties that barred their progress. Early in September the winter suddenly began; and to the north of Cape Felix, the most northerly point of King William's Land, the *Erebus* and the *Terror* were again bound in the iron grip of the frozen sea. There they were bandied backwards and forwards by the shifting ice, and in constant danger of being ground to pieces.

In the spring of 1847, Lieutenant Graham Gore of the *Erebus*, accompanied by another officer and six men, was despatched with sledges to King William's Land. Reaching Point Victory, they deposited there a brief record of the circumstances in which the expedition then stood: "All well. Party consisting of two officers and six men left ships on Monday, May 24, 1847."

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About a year later a mournful addition was made to his record. "H.M. ships *Terror* and *Erebus* were deserted on the 22nd April, five leagues northwest of this, having been beset since 12th September, 1846." "The officers and crews, consisting of 105 souls, under the command of Captain Crozier, landed here. Sir John Franklin died on the 11th June, 1847; and the total loss by deaths in the expedition has been to this date nine officers and fifteen men."

When Franklin died there was still the anticipation of ultimate success; but the short Arctic summer came and went, and the ships remained bound in the ice-pack. Then another dreary winter set in, bringing added fears and terrors with it, as the prospect of release from the icy prison seemed more remote than ever.

The spring of 1848 came on, and Captain Crozier, who had succeeded to the command of the party after the death of Franklin, felt that the only chance of life was to abandon the ships. Accordingly, 105 men took to the ice. Boats placed on runners and sledges had been prepared, with the intention of journeying to the mainland by way of Back's Great Fish River, the mouth of which was 250 miles away from the spot at which the vessels then lay. It was a cold and dismal, as well as a dangerous, jour-



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NORTH BAY WHERE SIR JOHN FRANKLIN'S EXPEDITION PERISHED FROM
SCURVY AND STARVATION

ney, undertaken only when no other way of escape seemed possible, and when the failure of provisions rendered it absolutely necessary.

What happened on that fatal march can be gathered from the story of the Eskimos, who told Dr. Rae that they sold seal's flesh to the white men. From a band of the same people McClintock learned that the explorers dropped their drag-ropes on the march, and died where they fell. A scanty remnant of about forty men, according to the estimate of the Eskimos, reached the vicinity of the Great Fish River, battling with the energy of despair against the fate that was overtaking them, and that left none to tell the story.

Napoleon's retreat from Moscow in the depth of the Russian winter was not more terrible than the march of this brave company across the wilderness. Overcome by fatigue and cold, the enfeebled explorers dropped out of the ranks one by one and lay down in the snow to die. Thus the band grew smaller as the journey continued. Those who remained pushed on with weary footsteps, and with hope and despair alternating at their hearts. Daily the death-roll increased till the last man of all dropped and the curtain fell on the final scene.

But the ill-fated expedition had not been in vain. It had succeeded in proving the existence

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of the long-sought Northwest Passage, having connected Lancaster Strait with the navigable channel that extends along the continent to Behring Strait, thus uniting a known track on the east with a known track on the west.

VIII

HOW DR. KANE ESCAPED FROM AN ICY PRISON

SOME one has said that the death of Franklin did more to add to our knowledge of the Polar regions than had been accomplished by his life. His strange disappearance amid the Arctic wastes was the signal for a remarkable series of attempts to penetrate into the ice-bound territory around the North Pole, with the view of discovering the fate of the brave explorer, and, if not too late, of rescuing him and his gallant crews.

The spirit of heroic daring and courage characterized all these expeditions; but the story of one of them, that led by Dr. Elisha Kent Kane, of America, deserves more than a passing reference. In all the literature of Polar exploration and adventure there is little to compare with the record of suffering and endurance set forth in the journal of this heroic commander.

For twenty-one months the vessel containing the search party was firmly locked in the very jaws of death. Provisions ran short; scurvy attacked the crew; accidents happened which

threatened the lives of all the expedition; and for months starvation stared them in the face. But amid it all, Kane's marvelous confidence in ultimate success never wavered. He hoped on, when every one else was resigned to death; and eventually he led his diminished band back to civilization across a stretch of ice and water for 1300 miles, after their vessel had been abandoned to its fate.

An experienced traveller and explorer before undertaking this expedition, Kane had been engaged, under Lieutenant De Haven, in an expedition which sailed from the United States in 1850 in search of Sir John Franklin; and, in the month of December, 1852, he was commissioned by the Secretary of the Navy to lead another party on the same humane mission. Setting out on board a vessel named the *Advance*, the expedition purposed passing up Baffin Bay to its most northerly attainable point; and thence, pressing on toward the Pole as far as boats or sledges could carry them, to examine the coast for possible traces of the lost party.

The departure was made from New York, May 30, 1853; and two months later we find the *Advance* off the coast of Greenland in imminent peril from the ice. The ship was fastened to an iceberg, and had barely time to cast off be-

fore the face of the berg fell in ruins, crashing with a noise like thunder.

The passage through Melville Bay was made without mishap, and then in the waters farther north the old enemy of navigation in these regions was encountered. "Directly in our way," reads the journal entry for 20th August, "just beyond the line of floe-ice against which we were alternately sliding and thumping, was a group of bergs. We had no power to avoid them; and the only question was, whether we were to be dashed to pieces against them, or whether they might not offer us some nook of refuge from the storm. But as we neared them, we perceived that they were at some distance from the floe-edge, and separated from it by an interval of open water. Our hopes rose as the gale drove us toward this passage and into it, when, from some unexplained cause—probably an eddy of the wind against the lofty ice-walls—we lost our headway. Almost at the same moment we saw that the bergs were not at rest; that they were bearing down upon the other ice, and that it must be our fate to be crushed between the two.

"Just then a broad sconce-piece or low water-washed berg came driving up from the southward. The thought flashed upon me of one of our escapes in Melville Bay, and as the sconce

moved rapidly alongside us, McGarry managed to plant an anchor on its slope, and to hold on to it, by a whale-line. It was an anxious moment. Our noble tow-horse hauled us bravely on, the spray dashing over his flanks, and his forehead ploughing up the smaller ice as if in scorn. The bergs encroached upon us as we advanced; our channel narrowed to a width of perhaps forty feet. We passed clear of the impending ice-walls, and into comparatively open water; but it was a close shave. Never did men acknowledge with more gratitude their deliverance from a wretched death."

Reaching latitude $78^{\circ} 43'$ N., the *Advance* was frozen up; and then, with the long night already upon them, the party settled down to the experience of an Arctic winter. From the very outset the difficulties and dangers descended thick and fast. The sledge-dogs fell into chasms; the sledge parties met with disasters, and were rescued only after heroic efforts; and disease and death were already busy among the men.

By the beginning of April, Kane is lamenting the fact that the week just ended has left him nothing to remember but anxieties and sorrow. Nearly all the party were then tossing in their sick-bunks, some frozen, and others undergoing amputations. By the end of the

month came the short season available for Arctic research, and though the condition of things on board the ship was far from satisfactory, the leader pushed ahead with the preparations for renewed exploration.

Sledge parties started off from the vessel; but on the 20th of May, Dr. Kane, propped up by pillows and surrounded by sick messmates, recorded the fact that he had again failed to force the passage to the north. Scurvy had broken out among the men; some of them suffered from snowblindness; and the leader himself, fainting and delirious, was saved from death only by the devotion of five of his men, themselves scarcely able to move. In addition, the heavy snows rendered travelling extremely difficult. It was thus a disappointed and discouraged party that returned to the shelter of the ship, with nothing to show but trouble and defeat.

It was characteristic of Kane, that as soon as he was sufficiently recovered to be aware of his failure he began to devise means for remedying it. The resources of the party were, however, shattered. There were only three men able to do duty. Of the officers, Dr. Hayes was the only one left on his feet.

Determining to trust in future almost entirely to the dogs for travel, Kane despatched

Hayes on a sledge journey of exploration, which succeeded in connecting the northern coast with the survey of a previous expedition; but it disclosed no channel or means of exit from the bay in which the ship lay. Dr. Kane was convinced, however, that such a channel must exist, "for this great curve could be no *cul-de-sac*."

To verify this theory he immediately began the organization of a double party, the field of which was to be the hundred miles to the north-east, which would complete their entire circuit of that frozen water. Two sledge parties were despatched. They returned in safety after their survey; but they had accomplished little to solve the doubts and difficulties of the situation.

The summer was wearing on, but still the ice did not break up as expected; and as far as could be seen it remained perfectly solid between the expedition and Baffin Bay.

On the 8th of July, Dr. Kane, reviewing the situation, took a rather despondent view of their being able to find a passage through the pack-ice. He was afraid that the winter might set in before they were half-way through. "There never was," he confides in his journal, "and I trust never will be, a party worse armed for the encounter of a second Arctic winter.

We have neither health, fuel, nor provisions. Dr. Hayes, and indeed all I have consulted, despond at the thought; and when I look around upon our diseased and disabled men, and think of the fearful work of the last long night, I am tempted to feel as they do."

The alternative of abandoning the vessel at that early stage of the enterprise did not commend itself to the commander. But what was he to do? We find him arguing with himself, "How are we to get along with our sick and amputated men? It is a dreary distance at the best to Upernavik or Beechey Island, our only places of refuge, and a precarious journey even if we were all fit for moving. But we are hardly one-half in efficiency of what we count in number. Besides, how can I desert the brig while there is still a chance of saving her? My mind is made up; I will not do it."

Determining to examine the ice-field for himself, Kane started off on a long sledge journey, and, as a result of this survey, he resolved to attempt in person to communicate with Beechey Island. He was confident that if he could get there, he would be sure of the much-needed assistance.

He was quite aware that this was a hazardous venture, but he regarded it as a matter of duty. Besides, he was the only one possessed of the

necessary knowledge of Lancaster Sound and its ice-movements.

Taking with him five men and the boat named the *Forlorn Hope*, which was mounted on a large sledge till the open water was reached, the little party proceeded on its southern journey, fighting daily with ice-floes, being nipped in the ice, and hauling the boat on the floes, sometimes as many as a dozen times a day, to escape the pressure of the floating masses.

At last, on 31st day of July, says Kane, "at the distance of ten miles from Cape Parry, we came to a dead halt. A solid mass lay directly across our path, extending onward to our farthest horizon. There were bergs in sight to the westward; and by walking for some four miles over the moving floe in that direction. McGarry and myself succeeded in reaching one. We climbed it to a height of a hundred and twenty feet, and, looking out from it with my spy-glass to the south and west, we saw that all within a radius of thirty miles was a motionless, unbroken, and impenetrable sea."

This was a great disappointment. It was obvious that any further attempt to penetrate to the south must be hopeless, till the ice-barrier should undergo a change. There was nothing for it but to return to the brig and face

another winter among the ice, with all the miseries which such a situation involved. "It is horrible—yes, that is the only word," wrote Kane in his diary—"to look forward to another year of disease and darkness, without fresh food and without fuel. I should meet it with less sadness if I had no comrades to think for and protect."

A few days later it was made clear beyond all doubt that the brig could not escape; and, calling the officers and crew together, Kane frankly explained the considerations which had determined him to remain where he was. He endeavored to show them that an escape to open water could not succeed, and that the effort must be exceedingly hazardous; but he was perfectly willing to give his permission to such as were desirous of making the attempt.

Eight out of the seventeen survivors of the party resolved to stand by the brig; the resources were divided, and on August 28th, "the remainder of the party moved off with the elastic step of men confident in their purpose, and were out of sight in a few hours." Months later, however, after many trials and hardships, and when they had failed in their purpose, the men who had departed so hopefully returned to the ship to share once more the unhappy fortunes of their suffering comrades.

It is not to be wondered at that the departure of half the crew had a depressing effect on those who remained behind, and that dark forebodings should occupy their thoughts. "The reduced numbers of our party, the helplessness of many, the decreasing efficiency of all, the impending winter, with its cold, dark night, our reduced resources, the dreary sense of isolation—these," wrote Kane, "made the staple of our thoughts. For a time Sir John Franklin and his party, our daily topic through so many months, gave place to the question of our own fortunes—how we were to escape, how to live."

The problem of how to live was certainly not an easy one to solve. But something had to be done, and one day a sealing expedition was organized. During the progress of the hunt, the party passed upon a belt of ice that was obviously unsafe. It was more than a mile to the nearest lump of solid ice, and to reach it the dogs were urged on with whip and voice. Everything depended on the dogs. It was a desperate race. The worst seemed over, when, within fifty paces from the solid ice, the dogs suddenly paused, terrified by the heaving of the ice. The left-hand runner went through; the leader followed, and a second later the entire left of the sledge was submerged.

Leaning forward to liberate the dogs, Kane

found himself swimming in a little circle of ice and water. "I succeeded in cutting poor Tood's lines," he afterwards wrote, in describing these moments of horror, "and let him scramble to the ice, for the poor fellow was drowning me with his piteous caresses. I made for the sledge; but I found that it would not buoy me, and I had no resource left but to try the circumference of the hole. Around this I paddled, the ice always yielding when my hopes of lodgment were greatest. During this process I enlarged my circle of operations to a very uncomfortable diameter, and was beginning to feel weaker after every effort.

"Hans meanwhile had reached the firm ice, and was on his knees, praying incoherently in English and Eskimo. At every fresh crushing-in of the ice he would ejaculate 'God!' and when I recommenced my paddling he recommenced his prayers. I was nearly gone. As a last chance I threw myself on my back, so as to lessen as much as possible my weight, and I placed the nape of my neck against the edge of the ice. Then I slowly bent my leg, and, placing my moccasined foot against the sledge, I pressed steadily, listening to the half-yielding crunch of the ice beneath.

"Presently I felt that my head was pillowed by the ice, and that my wet fur coat was slid-

ing up the surface. Next came my shoulders; they were fairly on. One more decided push, and I was launched up on the ice, and safe. We saved all the dogs; but the sledge, kayak, tent, gun, snowshoes, and everything besides were left behind."

But Dr. Kane's journal is by no means limited to a record of hardships. There are bits of description and lighter touches which make it one of the most entertaining of Arctic books. Thus he writes, September 13:

"The navigation is certainly exciting. I have never seen a description in my Arctic readings of anything like this. We are literally running for our lives, surrounded by the imminent hazards of sudden consolidation in an open sea. All minor perils, nips, bumps, and sunken bergs are discarded; we are staggering along under all sail, forcing our way while we can. One thump, received since I commenced writing, jerked the time-keeper from our binnacle down the cabin hatch, and, but for our strong bows, seven and a half solid feet, would have stove us in. Another time, we cleared a tongue of the main jack by riding it down at eight knots."

"We were obliged," he continues, "several times the next day to bore through the young ice; for the low temperature continued, and our

wind lulled under Cape Hotham. The night gave us now three hours of complete darkness. It was danger to run on, yet equally danger to pause. Grim water was following close upon our heels; and even the Captain, sanguine and fearless in emergency as he always proved himself, as he saw the tenacious fields of sludge and pancake thickening around us, began to feel anxious.

"Mine was a jumble of sensations. I had been desirous to the last degree that we might remain on the field of search, and could hardly be satisfied at what promised to realize my wish. Yet I had hoped that our wintering would be near our English friends, that in case of trouble or disease we might mutually sustain each other. But the interval of fifty miles between us, in these inhospitable deserts, was as complete a separation as an entire continent; and I confess that I looked at the dark shadows closing around Barlow Inlet, the prison from which we cut ourselves on the seventh, just six days before, with feelings as sombre as the landscape itself. The sound of our vessel crunching her way through the new ice is not easy to describe. It was not like the grinding of the old formed ice."

A little later Dr. Kane says: "On the 22d of September our latitude was $75^{\circ} 24' 21''$. I

now saw land to the north and west; its horizon of rolling ground without bluffs terminating at its northern end. Still further on to the north came a strip without visible land, and then land again with mountain tops distant and rising above the clouds. This last was the land to which Captain De Haven gave the name of Grinnell Land, and which perpetuates for all time the name of Henry Grinnell the sole promoter of the expedition. The following year the same land was seen by Captain Penny and given the name of Albert Land in honor of Prince Albert, and for some time a controversy waged on the matter, somewhat to the discredit of Great Britain. Here are some graphic passages from Dr. Kane's journal of his first Arctic winter. Writing under date of September 23 he describes a fatal break-up of the ice:

“How shall I describe to you its pressure, its fearfulness and sublimity! Nothing I have seen or read of approaches it. The voices of the ice and the heavy swash of the overturned hummock-tables are at this moment dinning in my ears. ‘All hands’ are on deck fighting our grim enemy.

“Fourteen inches of solid ice thickness, with some half dozen of snow, are, with the slow uniform advance of a mighty propelling power,

driving in upon our vessel. As they strike her, the semi-plastic mass is impressed with a mould of her side, and then, urged on by the force behind, slides upward, and rises in great vertical tables. When these attain their utmost height, still pressed on by others, they topple over, and form a great embankment of fallen tables. At the same time, others take a downward direction, and when pushed on, as in the other case, form a similar pile underneath. The side on which one or the other of these actions take place for the time varies with the direction of the force, and the strength of the opposite or resisting side, the inclination of the vessel, and the weight of the superincumbent mounds; and as these conditions follow each other in varying succession, the vessel becomes perfectly imbedded after a little while in crumbling and fractured ice."

"We are lifted bodily eighteen inches out of water," continues Dr. Kane. "The hummocks are reared up around the ships, so as to rise in some cases a couple of feet above our bulwarks—five feet above our deck. They are very often ten and twelve feet high. All hands are out, laboring with picks and crowbars to overturn the fragments that threaten to overwhelm us. Add to this darkness, snow, cold,

and the absolute destitution of surrounding shores."

"October 6, Sunday. 12 Midnight. They report us adrift. Wind, a gale from the northward and westward. An odd cruise this! The American expedition fast in a lump of ice about as big as Washington Square, and driving, like a shanty on a raft, before a howling gale.

"November 25.

"Our daylight to-day was a mere name, three and a half hours of meagre twilight. I was struck for the first time with the bleached faces of my mess-mates.

"Seventy-seven days more without a sunrise! twenty-six before we reach the solstitial point of greatest darkness!

"December 22, Sunday. The solstice!—the midnight of the year!

"December 23, Monday. Perfect darkness! Drift unknown. Winds nearly at rest with the exception of a little gasp from the westward.

"December 24, Tuesday. 'Through utter darkness borne.'

"December 25. 'Ye Christmas of ye Arctic cruisers!'

"Our Christmas passed without a lack of the good things of this life. 'Goodies' we had galore; but that best of earthly blessings, the communion of loved sympathies, these Arctic cruisers had

not. It was curious to observe the depressing influences of each man's home thoughts, and absolutely saddening the effort of each man to impose upon his neighbor and be very boon and jolly. We joked incessantly, but badly, too; ate of good things, and drank up a moiety of our Heidsieck; and then we sang negro songs, wanting only time, measure, and harmony, but abounding in noise; and after a closing bumper to Mr. Grinnell, adjourned with creditable jollity from table to the theatre."

When men can laugh and jest in the face of death, it is not remarkable that they should live to escape their icy prison—as, in fact, they did a few months later.

With the approach of spring it was decided to abandon the ship and make their way south by boats and sledges. The return journey was begun in May, and after eighty-four days of hardship they reached Upernavik, a distance of over 1300 miles, with the loss of only one man.

IX

FURTHER ADVENTURES OF AMERICAN EXPLORERS

AMERICAN enthusiasm for Arctic discovery did not end with the expeditions that had gone in search of the missing Franklin party. American navigators continued their researches, drawn on by the ambition of planting the Stars and Stripes at the most northerly point of the earth's surface.

Dr. Isaac Hayes, who had acted as surgeon with Kane's expedition soon after his return to America, began preparing for a voyage of discovery under his own command, being convinced of the existence of an open Polar Sea. Having obtained support enabling him to fit out an expedition, he sailed from Boston, in the schooner *United States*, in July, 1860, with a crew of twenty-one. Encountering a succession of furious northerly gales near Cape Alexander, in which the ship was seriously damaged, Hayes found his progress hindered, and was compelled to winter in Foulke Fiord, to the south of Littleton Island.

In April, Hayes started out from the ship with dog-sledges, with the intention of crossing Kane

Basin and following its western shores to the north. On May 11, he reached Cape Hawks, situated about seventy miles from his headquarters.

When the summer arrived and the ice broke up, the *United States* made her way out of Foulke Fiord, reaching home in the autumn.

The next American to lead an expedition into the icy wilderness of the North was Charles Francis Hall, who had long cherished the ambition of planting his country's flag at the Pole.

His first acquaintance with the Arctic regions was in 1860, when, with the object of searching for the remains of Sir John Franklin's expedition, he braved the hardships of that land for three years, living alone among the Eskimos, and practising their customs and mode of living. Again, from 1864 till 1869, he renewed his acquaintance with the land and its people, and brought back relics of the Franklin expedition.

These experiences, valuable in their way, were, however, but preparatory for the greater undertaking which Hall determined to make whenever he could procure the necessary support. "Night and day, day and night," he wrote to a friend, "weeks, months and years find my purpose fixed, without a shadow of wavering, on making that voyage. May Heaven spare my life to perform it!"

Successful in obtaining the support of Congress, Hall was appointed to the command of the expedition. "From Upernavik or Tossak," said his instructions, "you will proceed across Melville Bay to Cape Dudley Digges, and thence you will make all possible progress with vessels, boats, and sledges towards the North Pole, using your own judgment as to the route or routes to be pursued, and the locality for each winter's quarters. Having been provisioned for two and a half years, you will pursue your explorations for that period; but should the object of the expedition require it, you will continue your explorations to such a further length of time as your supplies may be safely extended. Should however, the main object of the expedition—viz., attaining the position of the North Pole—be accomplished at an earlier period, you will return to the United States with all convenient despatch."

Hall sailed from New York in 1871, in the *Polaris*, and was accompanied as far as Godhaven by the steamship *Congress* as a supply vessel. On leaving America the officers and crew numbered twenty-three souls, to which ten others were added in Greenland. Excellent progress was made on the voyage, and Captain Hall was encouraged more than ever to hope for the success of the scheme.

Captain Hall in the substantial tome which records his voyagings has left many memorable pictures of Arctic travel. Here is one: "The first Sunday at Holsteinbory (Greenland) I determined to ascend the mountain on the north side of the harbor, and there worship in the great temple of the world's Creator. In the morning accompanied by Sterry we began the ascent with a fine clear sky above and the glorious sun shining warmly upon us." (This was early in July). "But ere we had gone far, swarms of mosquitoes came around. Fortunately I had long hair on my head, and my beard and mustache were also of great length. Sterry, however, had to cover his face with his handkerchief leaving two little holes for lookouts.

"As we went on, streams of pure and sparkling cold water came dancing down the mountain-side, and at these we several times quenched our thirst. Thus steep after steep we mounted, but at what cost! The sun's rays poured hot upon our backs, and both of us soon had to doff our coats, leaving the mosquitoes to work their will. All we could do was to push on quickly, to see if we could get into a higher region where these torments did not abound. But our bodies soon became weary; and the steepness of the way was such that one false step would have proved fatal. Yet we were not without some relief. Patches

of broad-leaved laurel on the mountain-side refreshed us greatly as we rested, and beds of moss covered with smiling flowers served for a temporary couch.

“In about two hours we gained the summit, both of us covered with mosquitoes, and driven almost to madness by their stings. In vain we tried everything that mind could think of to get rid of them. Nothing availed, we were doomed by these merciless invaders, and our very life’s blood was drawn freely to satisfy their gluttonous desires.

“On the other side of the mountain we saw a beautiful little lake; and upon standing by its side, it was found to be clear as crystal, mirroring the lofty peaks above us. On its north shore was a low shingly beach, that had been thrown up by the winds coming in this, the only direction they could cross the water. This lake was fed by various small streams that were leaping down from the snowy mountains, and if it had got no other name I christened it ‘William Sterry Lake.’ We walked along it, and saw numerous salmon, small trout, (three of which we caught with our hands), and many skulls and horns of deer.”

The occasion and its description are so idyllic, that although space forbids we must continue:

“It was now dinner-time, and our appetite

was well sharpened by the exercise we had enjoyed. Accordingly a fire was lit whereby to cook the fish, though at first I was greatly puzzled how we were to get material for a fire. But Sterry who had been so much in this Arctic region also knew its resources. Where all looked barren to me he soon found moss, and some low brushwood like the running hemlock of our own country. It is a tough shrub with small leaves and white blossoms, which produce black berries with red sweet juice. Dwarf-willow, heather, and small undergrowth wood of various descriptions are intermixed. The dead wood, the leaves, stakes and limbs of preceding years, are thickly interspersed with the growing portions of this fuel, and with this Sterry quickly made a fire.

“A result followed, however, that we little expected. The abundance of such fuel all around us caused the fire to spread rapidly, and as a strong breeze was blowing, it soon got beyond control. Sterry took this miniature forest fire very calmly. ‘Let it burn,’ said he, ‘It can harm nothing hemmed in by these mountains.’ So I sat down to the primitive meal—a carpet of heather for our table, and huge precipices yawning close by, with high broken mountains that pierced the sky looking grimly down upon us. There is philosophy in everything, es-

pecially eating. The world eats too much—learn to live—to live as we ought a little food well eaten is better for any one than a banquet consumed with an ill-grace. Our pleasures have a higher relish when properly used. Thus we thoroughly enjoyed our food and after a short nap started on the return journey.

“As we passed along I noticed several large rocks, thousands of tons in weight, that had evidently fallen from the tops of the lofty mountains, the detached portions corresponding in shape to the parts vacated. Everywhere were seen the effects of the freezing solid of the water that penetrates into the crevices. The tremendous workings of nature in these mountains of Greenland during the Arctic winter often result in what the inhabitants believe to be earthquakes, when in fact the freezing of water is alone the cause! In descending we came across several clear little bubbling brooks, innumerable flowers and shrub—fuel in abundance. Peat was also plentiful. Fox-holes in numbers were seen, and a natural canal with an embankment, in appearance much like the levee of New Orleans.”

This whole scene is so different from anything to which we have hitherto treated our readers, that we cannot bear to delete a sentence. One could imagine oneself for the moment in

the finest parts of Switzerland, and yet this was Greenland. Here is another lively picture to contrast with the long tale of Arctic hardships:

“On the 16th of July, we endeavored to return the many kindnesses shown to us by the good people of Holsteinbory, by inviting them to a ball on board. The lieutenant-governor and lady, the schoolmaster and his wife, with their infant child at her back, and most all the town were there. Never did the *George Henry* and her crew look happier, gayer or present a more varied scene. With warm hearts, honest faces, and a ready mood for the fullest mirth of the hour did we enter upon the festive day.

“The vessel was decorated for the occasion and it would amuse most friends at home could I tell all about that day. In the merry dance the Eskimos did their utmost, and our bold sailor-boys, were not one step behind. Even Captain B. Mute Rogers, and myself (Captain Hall was a rather large, dignified-looking man and a New England Puritan), had to join in the dizzy whirl. I was positively *forced* into it. One and all insisted on my ‘treading the light fantastic toe.’ My hands were placed in those of two Eskimo ladies; and I was fairly dragged into the dance; and dance I did! Yes, I *danced*; that is, I went through certain motions which in courtesy to me was called dancing, but

what would the belles of Boston have said of it? I blush to think. However it so happened that *nobody was hurt*, except a few of the Holstein-bory maidens on whose feet I had rather clumsily trod and who went away limping, with remarks. As for the *dancing* let me honestly confess that I felt the better for it. I am sure that many evils in my nature found a way out at my feet."

After Melville Bay had been safely navigated, the *Polaris* experienced her first contact with the ice off Hakluyt Island. Smith Sound and Kennedy Channel were navigated without any serious trouble, and the highest point in the voyage was then reached, 82° 11' N., up to that time the highest north latitude ever touched. It was not possible, however, to maintain this position, for the swift current carried the vessel with it, and protection from the fog and snow had to be sought by anchoring the *Polaris* to a large ice-floe.

In the steady drift southward Captain Hall observed a small bay, which he was desirous of exploring in the hope that it might afford some shelter; but though he twice made the attempt, he did not succeed, and in commemoration of his double defeat he named it Repulse Harbor.

It was only by exercising the greatest care that the *Polaris* was kept free from damage dur-

ing these days of constant struggle with the ice. The sailing-master urged Captain Hall to seek a harbor at once and go into winter quarters; but he was still hopeful of working farther to the north. He did not want to abandon any chance that might be found of reaching a higher latitude before being compelled to seek quarters for the winter. To consider the situation he called a council of his officers. The opinion was unanimous among them that it was impossible to advance to the north along the eastern side of the channel. It would, therefore, be necessary either to seek a harbor on the east coast, or to attempt a passage to the westward. The latter of these courses was adopted by Hall in the hope that opportunities for sledge traveling might be afforded. If defeated in this plan, he would seek a harbor on the eastern coast.

It was with the greatest difficulty that the ship was able to move at all, for on every side were huge floes, to one of which the *Polaris* had to be secured. On the morning of September 1st, heavy snow squalls added to the difficulties of the situation; and as the ice, forced by the wind, pressed closer and closer upon the ship, there was every prospect of its being crushed to pieces. Realizing the danger, the captain ordered his men to be in readiness to leave the vessel at a moment's notice.

As the pressure increased, the *Polaris* heeled over, and was almost forced upon the surface of the ice. A catastrophe seeming imminent, the stores and provisions were quickly removed from the hold and placed upon the deck in preparation for a hurried retreat. On the morning of the 2nd of September the outlook was even darker. There seemed no possibility of escaping from the gigantic floes that surrounded the ship, and her destruction was hourly expected. Provisions and coal were lowered on to the ice, so that in the event of the crew having to abandon the *Polaris*, they would have a supply of necessities for the winter.

Calling the men together, Captain Hall spoke with satisfaction of what had already been accomplished. They had done all that they could, he said, and had only given in to a force that it was impossible to resist. But the brave leader was not without hope. He still believed that there was no reason to doubt the accomplishment of their object—the reaching of the Pole—though he could not conceal from his men the danger of their position.

As the day advanced the weather showed signs of improvement, and the stores that had been placed upon the floe were taken back to the ship. Having cast off from the ice, the vessel proceeded under steam towards the eastern shore,

soon reaching water that was comparatively free from obstruction, and ultimately anchoring in a harbor.

Being anxious to make a sledge journey before the winter set in, Hall announced his intention of proceeding on an exploring expedition to determine how far north the land extended on the east side of the strait on which the *Polaris* was wintering. He wished also to prospect for a feasible inland route to the northwest for sledging in the following spring, when an attempt would be made to reach the Pole.

With two sledges, and accompanied by three of his men, Captain Hall set out on this journey and penetrated as far north as Cape Brevoort, where he deposited a record of what had been accomplished. "From the top of an iceberg," wrote the commander, "we could see a bay, which extended to the high land eastward to southward of the position about fifteen miles. On arriving at the mouth of the bay we found open water, having numerous seals in it bobbing up their heads. This open water debars all possible chance of extending our journey on the ice up the strait; and the mountainous character of the land will not admit of our sledging farther north. As the time of our expected absence was understood to be for two weeks, we commence our return journey to-morrow morning.

On the following day the journey back to the ship was begun. It was the gallant captain's last trip of exploration, little as he suspected it at the time.

Soon after reaching the *Polaris*, Hall became very sick after drinking a cup of coffee. Dr. Bessels was considerably alarmed when he examined the patient, whose condition for the next few days gave rise to the gravest fears. On the 28th the commander was much worse. His mind began to wander; he refused to take medicine, and did not recognize those around him. He revived a little during the following week; but on the morning of November 7 he sank into a state of unconsciousness, and passed quietly away early the next day, his last words being to Dr. Bessels, whom he thanked for his kindness to him. He was buried on shore two days afterwards. Owing to the great darkness, the little procession of mourners that accompanied the body to its last resting-place had to pick their way over the ice with the aid of lanterns, although it was near the middle of the day.

The command of the expedition devolved upon Captain Budington; but so far as the main object of the enterprise was concerned it was practically at an end, the death of Hall having proved fatal to farther advance. The winter passed without mishap, though for most of the

time the vessel, under the ice-pressure, lay on an uneven keel, thus rendering motion on the decks or sleeping in the berths very uncomfortable.)

In the spring of 1872 several sledging expeditions were carried out; and the coast was explored as far south as Cape Bryan. In June boat journeys were made to the northward, but the voyagers did not get beyond Cape Sumner.

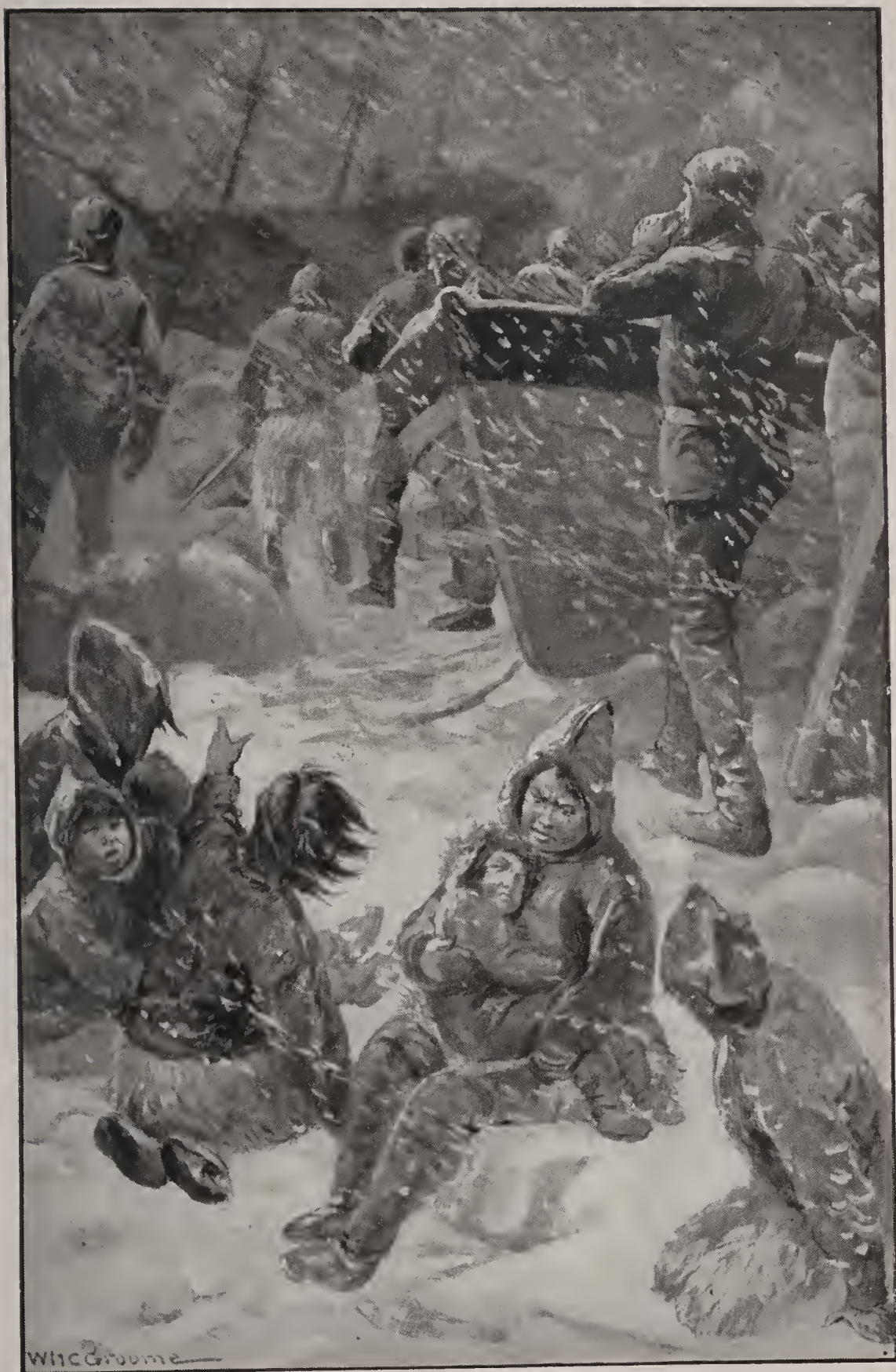
Determining to return home, Captain Buntington guided the *Polaris* out of her winter harbor; but the trials of the expedition were only now beginning. At the mouth of Kennedy Channel, the ship was beset by ice in the month of August; and for two long weary months, full of fears and dangers, each day appearing to put farther away the prospect of release, the ship drifted with the ice. At last, as the only chance of life, it was decided to abandon her; and towards the middle of October the final preparations were made for taking to the ice.

"The *Polaris* was drifting along at a rapid rate," says the official story. "Eager faces looked over the rail and peered into the darkness, wondering what would happen next. The sky was threatening. The moon struggled in vain to break through the clouds. Two icebergs were passed in close proximity. One could scarcely help shuddering at the thought of running into one of these gigantic ice-mountains.

“At 7:30 the vessel ran among some icebergs; at the same time the pack closed up, jamming her heavily. It was then the vessel received her severest nip. She shook and trembled. She was raised up bodily and thrown over on her port side. Her timbers cracked with loud reports. The sides seemed to be breaking in. One of the firemen, hurrying on deck, reported that a piece of ice had been driven through the sides. Escape from destruction seemed to be impossible. The pressure and the noise increased together. The violence of the storm, the darkness of the night, and the grinding of the ice added to the horror of the situation.”

Amid these terrifying conditions, Captain Budington, despairing of finding further safety on the vessel, gave orders for the stores and provisions to be thrown upon the ice. Realizing the critical situation and the necessity for speedy action, the men exerted themselves to the very utmost, and performed feats of strength that would not have been possible under ordinary circumstances. Beds and bedding were next transferred to the floe; and three boats were lowered and placed upon the ice. This happened on October 15, within sight of Northumberland Island.

When night came on, the gale was still blowing with terrific force; and, almost before any



"GOOD-BYE, *POLARIS!*"

one realized what was happening, the vessel suddenly broke from the ice and was carried rapidly away from it, leaving upon the floe nineteen persons, including several Eskimos. The night was dark, and in a few moments the floe, with its freight of human souls, disappeared from view; but across the blackness came the sound of a voice shouting, "Good-bye, *Polaris*!"

The tragedy had fallen so swiftly that those on board the vessel could scarcely realize what had happened. For a few moments they could only stand in amazed silence. But soon their own condition called for action, for the *Polaris* was by this time leaking very badly, and the men were put to the pumps with orders to work for their lives. The water had already reached the floor of the fire-room. Had it not been checked just in time by the action of the pumps, it would in a few minutes more have extinguished the fire itself; and here, in all probability, would have ended the story of one section of Hall's expedition.

Drifting rapidly till midnight, the *Polaris* then ran into broken ice, which stayed her progress; and on the following day she was successfully beached in Life Boat Cove, where the winter was passed. As it was no longer possible to remain on the ship, houses were built on shore.

When the summer came round, another at-

tempt was made to get away from the desolate regions of ice and cold. The *Polaris*, no longer of any service to the expedition, was finally abandoned in June, 1873, when in two boats, built under the direction of one of the officers, the party turned their backs on Life Boat Cove, and made one more attempt at escape.

Another series of hazardous adventures now began. Their old enemy the ice still resisted their progress to the south, and threatened them again and again with disaster. When they were crossing Whale Sound the ice suddenly closed, pressing heavily against Captain Budington's boat, and only the prompt action of the crew in leaping upon a floe and dragging their boat after them prevented its being crushed. The cake of ice on which they had taken refuge was not more than twice the size of the boat itself, and there a night of terror was passed.

Frequent experiences of this sort occurred before they were finally out of danger. On June 23rd, the whaling-vessel *Ravenscraig*, from Kirkcaldy, Scotland, was sighted. Once on board this hospitable vessel, their long period of suffering was over, and the little band of explorers were safe at last.

As for the party left on the ice floe, it is not easy to imagine their consternation when the gale drove the *Polaris* away from them. When that

calamity happened, most of the men were engaged in arranging into some sort of order the stores and provisions that had been hastily thrown upon the ice. Some of the provisions were lost when the ice parted, and the night was too dark and stormy to risk life in going after them.

The next day several of the men took to the boats, with the intention of reaching the shore and obtaining the assistance of the Eskimos living in the neighborhood in procuring food and shelter for the party. But it was found impossible to make any headway through the broken ice; and the attempt had to be abandoned.

It seemed, however, as if relief would reach them from another quarter; for, soon after this disappointment, the *Polaris* was seen rounding a point eight or ten miles distant, under steam and sails. Signals were immediately raised, and hope ran high. Surely their comrades on board would see them and come to the rescue. Straining their eyes, they followed the movements of the vessel from which they had so recently parted, anxiously watching for any sign that they had been observed. But the ship passed out of sight; and they were left to do battle with hunger and cold, and to face the horrors of an Arctic winter.

The weather, which hitherto had been thick, with heavy snow-showers, cleared up. It was

then seen that the floe was entirely surrounded by water, and that it was drifting southward. By the end of the month, the effects of exposure and the want of food began to show themselves. Some of the men were scarcely able to stand. Had it not been for the skill of the two Eskimos, Joe and Hans, in hunting seals, the entire party must have perished. Again and again the timely arrival of a seal saved the starving band from death, and sometimes, in their haste to satisfy the cravings of hunger, the seal was eaten uncooked.

Nearly three months dragged wearily by. The first day of the new year (1873) was the coldest they had yet experienced on the floe; and all the party were in a condition of extreme weakness, owing to the lack of food. These dismal conditions were little altered during the month.

February came in with a great gale, which lasted for several days. On the 21st of that month, for the first time since the beginning of the year, the thermometer rose above zero. But the supply of food was still woefully short, and in order that it might last till April, the daily rations were reduced to seven ounces. Even this limited supply had to be lessened soon afterwards to the very smallest quantity upon which life could be sustained.

By the 1st of April the floe had wasted to such

an extent that it was no longer safe. The party thereupon took to their boat, nineteen persons crowding into a tiny craft that had been constructed to carry less than half that number. At first the boat lay too deep in the water, and a hundred pounds of meat, and nearly all the clothing, had to be thrown overboard.

For a month this little company, that had passed through so many hardships, braved the dangers of the deep in their frail boat. The frequent pressure of the ice necessitated repeated landings on the floes; and sometimes it was only after considerable difficulty that the landing was effected, and the boat dragged up out of the water.

On the 19th the party again sought shelter on the drifting ice. That night a heavy sea washed over them, carrying away everything that was loose, including the tent and most of the clothing. It seemed as if the boat would be the next to go, and if that happened all possibility of escape would be gone. It was necessary, therefore, to make a great effort to prevent such a catastrophe. Standing round the boat, the men held on with all their might, remaining in this attitude all through the night until seven o'clock in the morning, doing battle with the angry waves, and receiving severe bruises from the blocks of ice that were hurled against them out

of the raging sea. Grimly they held on, knowing well that any slackening of effort would mean destruction. It was a struggle of heroes; and they fought in silence, which was broken only by brief words of encouragement to each other as they stuck to their posts.

The next few days brought but little relief. Everybody was cold and hungry; but they were drifting nearer to the track of vessels, and a new hope was bearing them up.

During the afternoon of the 27th a steamer was sighted, and as she appeared to be bearing down upon the castaways their hearts thrilled with joy. But the joy was short-lived. The steamer failed to see them, and passing from view, left the sufferers in despair.

Two days later they had to endure another disappointment; a steamer appeared in sight about eight miles off, but proceeded on her way without observing them. The next day, however, brought the long-hoped-for relief. In the morning a steamer was seen close to the floe, which was then off the coast of Labrador. She proved to be the sealer *Tigress*, from Newfoundland; and from Captain Bartlett and his crew the shipwrecked party received every kindness.

Thus was brought to a happy ending the long and terrible struggle that had lasted for one hun-

dred and ninety-six days, eighty-three of which were without the sun, and during which they had drifted 1500 miles.

The *Polaris* expedition had not reached the Pole, but the voyage was fruitful in geographical results; and the fact that both sections of the crew, after months of hardship, had come back alive, more than outweighed the disappointment at the failure of the main object of the enterprise.

X

THE "JEANNETTE" EXPEDITION

EACH failure to reach the Pole only seemed to lend stimulus to further effort, and to intensify the desire to break through the barrier of ice that blocked the way to the great secret of the North.

Lieutenant George Washington De Long, of the United States Navy, was the next to make the attempt on behalf of America. He had carefully studied the conditions prevailing in the Arctic regions, and had formed the opinion that there were three routes by which a successful effort might be made to reach the Pole—Smith Sound, the east coast of Greenland, and Behring Strait. He selected the last, believing in the existence of a Japanese current running north through Behring Strait and onwards along the east coast of Wrangel Land. The warm water of this current, he argued, would open a way along the coast of Wrangel Land, possibly to the Pole itself; and as whaling vessels locked in the ice there had drifted northwards, he concluded that the current set in that direction.

Supported in his enterprise by private funds,

De Long spent some time in a quest for the right kind of vessel, purchasing at last from Sir Allen Young his Arctic yacht *Pandora*, and changing her name to the *Jeannette*. Well equipped for her purpose, the *Jeannette* sailed from San Francisco in July, 1879. Steaming her way northwards towards Wrangel Land, she found herself, by the beginning of September, among the drifting ice-floes.

Watching his opportunity, De Long steered his ship into the ice-pack, thus boldly putting to the test his theories with regard to the drift which he believed would carry him to his goal. For a few days he sailed through the floating mass, and then the ice closed around him. The *Jeannette* was locked in a frozen prison, to remain there until, two years later, she was crushed between the floes, leaving the men who had shared her fortunes homeless on the ice.

The winter set in rapidly. On November 14th the sun disappeared from view, and was not again seen till the end of January, the whole of which month was full of danger to the *Jeanette*.

Threatened by the great masses of grinding ice, rising in some places to a height of fifty feet, which enclosed her on every side, the vessel seemed doomed; and it looked as if she would have to be abandoned. But the danger

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passed for a time; and, remaining in her frozen prison, she drifted with the ice till the shore of Wrangel Land, which had up to that time been visible, disappeared from view towards the end of February.

The summer came and went, and still the explorers were surrounded by icy walls which offered no way of escape. The life of inactivity was beginning to tell upon the spirits of the men, and even De Long himself was discouraged by the long imprisonment. Already they had spent a trying year in the grip of the floes; and, as another winter was rapidly approaching, the prospect of liberation was as far off as ever. Soon the long night of darkness fell once more upon the disheartened party; and they waited, with what patience they could, for the return of the daylight.

The steady drift northwards brought the *Jeannette* at last within sight of land. On May 16, 1881, to the great relief of all on board, an island was seen in the distance, to which De Long gave the name of Jeannette Island. Eight days later land was again seen, and a party, going off from the ship to investigate it, named it Henrietta Island.

About the beginning of June the ice began to press more severely than ever upon the vessel, causing the timbers to crack and the seams

to open. Every one on board was convinced that the chances of the *Jeannette* holding together were slight indeed. De Long and his comrades were considering what was best to do, whether to leave the ship or to remain on her in the hope of the pressure lessening, when the moving floes bore down upon her, and made instant action imperative. The ice was splitting up, and, jammed between huge masses, the *Jeannette* lay in a hopeless position.

It was on the 12th of June that orders were given to abandon the ship. There was no panic, for such a possibility had long been foreseen. Every man knew his duty, and set about performing it. The colors were hoisted to the mast-head, and boats, sledges, and provisions were lowered on to the ice. The ship heeled over, even while this work was being carried out, until it became impossible to stand on deck without holding on to something. At last, when all the indispensable articles had been transferred, De Long followed his men on to the ice. He was the last to leave; and waving his cap and crying, “Good-bye, old ship!” he leaped on to the floe to join his companions.

Deprived of the shelter of the *Jeannette*, it was not a cheering prospect that faced the stout-hearted band. They were five hundred miles from the mouth of the Lena River, the

nearest point of relief; some of the men were ill, and the food supply was dangerously low. They at once set about preparing a camp, and then lay down to sleep and to forget the troubles of the day just ended.

A few hours later, they were awakened by a noise like thunder. The giant floe had split. One crack came directly through De Long's tent; and "had it not been for the weight of the sleepers on either side of the rubber-blanket," Melville tells us, "those in the middle must inevitably have dropped into the sea. As it was they were rescued with great difficulty.

"Although the boats, sleds, and provisions had been placed close to the tents to avoid separation by just such an accident as this, we now found ourselves driven away from them. Boards were at once thrown across the crack, nimble feet sped back and forth, the sleds and boats were successfully jumped over, and when the gap had widened beyond the length of the planks a way was discovered around it. The provisions recovered, our tents were quickly shifted back from the edge of the floe, and we were soon dozing again in our sleeping bags."

When the camp awoke there was no ship. The *Jeannette* had sunk about four o'clock in the morning; and there, upon the cruel ice, stood the gallant band, about to begin the des-

perate fight that for most of them was to end in death. But they faced the unknown with a smile upon their faces and with hope in their hearts.

A week was spent in preparation; and then began the long and trying journey towards the south. It was hard dragging the overladen sledges over the sodden snow that soaked the men as they marched; but they could not risk leaving anything behind.

The load consisted of two cutters, a whale-boat, the sledges laden with tents, and provisions to last for sixty days. Owing to the heavy hauling it was necessary to travel the same road several times. Frequently the sledges sank in the soft snow and broken ice, and only by combined effort could they be extricated.

With the view of lessening the difficulties of the march, the travelling was performed by night instead of by day, in the hope that the track, in the absence of the sun's rays, would be firmer, and therefore easier to traverse.

In spite of the hardships of the journey, the men pulled with wonderful cheerfulness; and although they wore the soles of their moccasins right through to their stockings, and sometimes stood with bare feet on the raw ice, not a word of complaint passed their lips.

These were not by any means the only dis-

couragements that had to be faced. Every day had its own peculiar trials and disappointments. One day De Long made the startling discovery, that although they had for the preceding week been traveling steadily towards the south, they were actually twenty-eight miles farther to the north than when they started. This proved conclusively that the ice was bearing them to the north at a greater rate than they were able to travel in the opposite direction. A change of course from south to south-west was, therefore, immediately decided upon. About a week later De Long learned from another observation that the alteration of route had been successful, that they had gained twenty-one miles, and were approaching nearer to the shores of Siberia.

Land and water were sighted in July. The party landed on what proved to be an island, which was named Bennett Island. The explorers remained there until the boats were repaired, and then once more resumed their weary and perilous journey.

Their next landing was on one of the New Siberian Islands, where a camp was pitched on a mossy plain close to the shore. Again they left land behind and embarked on the water, De Long commanding one of the cutters and

Lieutenant Chipp the other, while Chief Engineer Melville had charge of the whale-boat.

Up to a certain stage the dangers and difficulties of the journey had been confined to the snow and ice; now these were transferred to the water, a change that did not make for increased comfort or safety. The cutter containing Chipp and his men, being smaller and slower than the other two boats, was soon left in the rear; but it again joined the others, just as their companions, who had waited for them on an ice floe, were beginning to fear that they had been lost in the gale.

The brave party fought their way along, sitting all the while in cramped positions and bailing the water out of the boats to keep them from sinking. Dodging the sharp edges of the ice as best they could, and taking advantage of every opening in the floes, the three boats made fair progress.

The weather was still very stormy, and it was evident that with such a wind blowing it would not be safe for the boats to risk crossing the open sea between the islands and the coast of Siberia, if the sledges were retained on board. Accordingly De Long directed that they should be broken up for firewood, and the pieces stowed in the boats.

Shut in for some days by the drifting ice-

pack, which prevented advance by water, the explorers found themselves in a serious situation. Not only was the winter closing in around them, but the provisions were nearing an end; and the islands which lay ahead were without inhabitants. De Long, Chipp, and Melville discussed the situation, and decided that they would proceed from point to point along the south side of the islands of New Siberia until they reached Cape Barkin at the Lena Delta, where, according to their charts, they confidently expected to find native houses.

Once more in their boats, they proceeded on their journey, the sea running high and the waves constantly lashing over them; at one time in clear water, at another in the midst of a whirling mass of broken ice; sometimes pulling for their lives to escape destruction from the floe; and all the time on an allowance of food that barely sufficed to keep life in their bodies.

It was by this time almost the middle of September, and hope was beginning to return, as Cape Barkin, the point which they desired to reach, was now less than ninety miles distant.

Just before re-entering the boats, after a brief halt, De Long asked Chipp and Melville to keep within hail, if possible; and he repeated his instructions as to the course to be pursued should they be separated. "Make the best of



SIGNALLED HER TO GO ON

your way,” he said, “to Cape Barkin. Don’t wait for me, but get a pilot from the natives and proceed up the river to a place of safety; and be sure that you and your parties are all right before you trouble yourselves about me.”

The boats had not been long on their way before the sea rose considerably, and by evening there was such a hurricane blowing that it seemed impossible to live through it. Attempting to slacken speed and thus keep in the wake of the first cutter, according to orders, the whale-boat narrowly escaped being swamped. Melville noticed that De Long was making signs to him, and shouting something which could not be heard above the roar of the wind. Shouting to his commander that he must either run or swamp, Melville eagerly waited for some sign of reply. His words seemed to reach De Long, who, realizing the imminent peril of the whale-boat, waved his arm and signalled her to go on. Under additional sail the whale-boat then leaped forward, and speedily outdistanced the first cutter.

Looking back to ascertain the whereabouts of the cutters, Melville saw Chipp’s boat, in the far-off dim twilight, rise for a moment on the crest of a wave and then sink out of sight. Keeping his eye on the place where he saw her disappear, he anxiously waited to see her come

again to the surface; but though the waves rose and fell around the spot, the boat was not seen again. As nothing further was ever learned about the cutter's fate, Melville was convinced that that was the moment when she took her final plunge, burying beneath the waves the Lieutenant and his men.

Meanwhile, De Long's cutter was being kept afloat with the greatest difficulty. Much water was shipped; the mast and sail were carried away; and, tossed about on the tempestuous sea, the helpless boat was in momentary danger of sinking. At last, after four days of awful misery, every minute of which threatened death, the cutter came within sight of land, and, when about a mile from the Siberian shore, ran aground. A raft was hastily constructed; and pushing it through the frozen water, the wet and exhausted men gradually reached the land.

They had escaped the terrors and dangers of the sea; but the dangers of the land, as grim and terrible as any yet experienced, had to be faced. Utterly worn out, they lay down on the ground to sleep, and rose in the morning, soaked to the skin, to meet the miseries of cold and hunger.

Leaving everything behind that could possibly be spared, they set out in search of a settlement where they could find shelter and food.

It was a pitiable procession. There was not one strong man in the company; for the long battle on the floes and on the sea, combined with the want of food, had drained their strength till they could scarcely crawl. Slowly and feebly they pushed on over the barren ground. They had little to eat, and already some of the party were falling down from weakness.

Reaching a couple of deserted huts, they rested there for three days; and then, feeling slightly refreshed, they resumed their toilsome march. On they tramped till not a scrap of food remained; and, in desperation, their dog was shot to provide them with a meal. Completely exhausted, one man died; and his companions, too weak to bury him, dropped him into a river. Seeing the terrible state of their comrades, two of the men, Nindemann and Noros, started off ahead in the hope of finding help.

It was now the middle of October, and winter, with all its terrors, held the despairing men in its fatal grip. There was nothing to eat, and, unable to continue the struggle, they sat down to wait the end. One by one the little party, that had undergone so many hardships and had fought so hard for their lives, were overcome and lay down to die.

So long as he was able to hold a pen, De

122 "JEANNETTE" EXPEDITION

Long noted in his journal the deaths of his companions, the last entry being on October 30th. There the tragic story ends. On the frozen ground lay the bodies of the brave commander and his men. Like so many others before them, they had hoped to conquer the secrets of the Frozen North; but where they looked for victory and honor, they found defeat and death.

Little more remains to be added with regard to the fate of the *Jeannette* Expedition. After many buffetings by wind and waves, the whaleboat succeeded in reaching land, without a man missing; and falling in with some natives, Melville and his men were kindly treated.

Nindemann and Noros, pushing on from De Long's party, were reduced to terrible straits before they had gone far on their journey.

Coming to a deserted hut, they found a small quantity of mouldy fish. This they ate, and were afterwards taken seriously ill. In their extremity they met an Eskimo, who brought them to his friends. They tried to make the natives understand that they wanted help for their comrades, but all their efforts in this direction failed.

At a larger settlement, called Balun, to which the Eskimos escorted them, they came across Melville, who, hearing of their arrival,

had hastened to meet them. Melville heroically attempted to go back on the tracks of Nindemann and Noros, hoping that he might yet be in time to save some of De Long's party; but the difficulties that beset his path rendered the attempt unsuccessful.

A little later, Melville and Nindemann made their way back to the spot at which death had overtaken their companions. They found the bodies, and buried them; but they were not permitted to lie long in their lonely Northern grave, being soon afterwards brought back to America for interment; and here belated honors were paid to the memory of the heroic band.

XI

GREELY SETS A NEW NORTHERN MARK

WHILE De Long and his men were battling with the ice-floes, another expedition from the United States, under Lieutenant Adolphus W. Greely, was on its way towards the Pole.

In July, 1881 the steamer *Proteus* chartered for the expedition, left St. John's, Newfoundland, and safely reached Lady Franklin Bay, in Grinnell Land. In its progress northward the expedition experienced little opposition from the ice; but the landing in Discovery Harbor was barred by a great frozen wall, which the *Proteus*, attacking with her iron prow, gradually broke down. A site for a house was soon chosen, and to the station Greely gave the name of Fort Conger, in honor of the American senator to whose efforts the expedition was chiefly due.

After landing the stores and equipment, the *Proteus* steamed southward, fighting her way out of the ice-blocked harbor after several unsuccessful attempts to break through the ice obstructing her path. She was to return in the

following summer with fresh supplies, so that the farewell, it was thought, was but for a short time.

With the ship's departure the expedition settled down to its winter's work. The sun disappeared on October 14, leaving the explorers in the intense and prolonged darkness of the Arctic winter. A semi-monthly newspaper, *The Arctic Moon*, edited by Lieutenant Lockwood, was prepared with the view of providing some little amusement and diversion; but it seems to have only partially succeeded in its praiseworthy object, for it ceased after two months. In January the camp was visited by a violent storm, which threatened to demolish the house; but its protecting snow-banks offered a firm resistance to the hurricane, and prevented the catastrophe which, with the gale blowing at a velocity of sixty-five miles an hour, seemed inevitable.

The return of daylight, about the end of February, was the signal for the commencement of the sledging expeditions. It had been Greely's original intention to perform the greater part of this work with dogs, of which three teams had been purchased in Greenland. But of the twenty-seven animals shipped only twelve were still alive.

Early in the season, Dr. Pavy, the surgeon

of the expedition, made a sledge journey along the eastern coast of Grinnell Land to its extreme northern point, near Cape Joseph Henry. Other parties worked in the interior, discovering abundant deposits of coal within a few miles of the station. In April, Lieutenant Lockwood and other members of the party crossed Robeson Channel to the Greenland coast, reaching on May 5th, $83^{\circ} 24' 5''$ N., the farthest north hitherto attained by man.

These journeys were not conducted without the usual accompaniment of danger and adventure. Pavy had to struggle against the difficulties of broken hummocky floes and open water; while Lockwood and his companions encountered a terrific gale in Robeson Channel, and for two days had to remain in the shelter of their sleeping bags, being unable during that time to do any cooking owing to the tremendous force of the storm. At one point the wind was so powerful that it lifted the dog-sledge, with its 200-pound load, high into the air; and, as the tents could not be pitched, the men made themselves as comfortable as was possible under the trying circumstances by burrowing into the snow.

In spite of these and other drawbacks, the brave little party pushed northward till they had advanced four miles nearer to the Pole than

any previous expedition. Here the Stars and Stripes were proudly hoisted.

The summer came and went without any sign of the *Proteus* with the needful supply of provisions. Winter was again approaching, and the explorers settled down to face it with what patience and courage they could command. It was obvious, as Greely said, that the second winter could hardly pass as pleasantly as the first. "The novelty of Arctic service had passed, while the unvarying routine and wearisome monotony could not but depress the spirits of the men. The non-arrival of the *Proteus* not only threw a gloom over the party, but it necessitated a restriction in the use of certain articles of food."

The winter passed uneventfully. There was little to do at the station; but Greely's active mind reflected on the course to be adopted should the *Proteus*, for the second time, fail them. It was not a pleasant subject to think about; but he could not close his eyes to the fact that what had happened once might happen again; and it was possible that the coming summer would still find them without the needed relief. So he mapped out his course and prepared his plans.

Sledging expeditions were undertaken in the spring; and then in the summer occurred, as

Greely himself describes it, "the only marked breach of discipline during our two years at Conger." The unpleasant incident happened with the surgeon. "Dr. Pavy," Greely goes on to say, "was an excellent physician, but any restraint was irksome to him, and he particularly disliked being under authority. As he positively refused to obey my orders, it became necessary to place him under arrest, with permission to take such exercise as was necessary, within a mile of the station."

This unfortunate incident is mentioned to show that, in addition to the other troubles of the party, Greely had to face difficulties from which the leaders of other Arctic expeditions had been free.

By the end of July, 1833, everything was in readiness for retreat from Fort Conger, and an order was issued announcing that the station would be abandoned if no vessel should arrive before that time.

Reviewing what had been accomplished during their stay there, Greely sums it up in these words: "We had experienced two years of unequalled cold and darkness, but the amount of work done was quite extraordinary. The sun had shone 453 days, and on 262 days from one to three sledge parties had been in the field on journeys entailing from two to six days' ab-

sence and 3000 miles of travel. Our explorations covered $31\frac{1}{2}^{\circ}$ of latitude and 45° of longitude, one-eighth of the way around the globe above the 80th parallel.

"To the north a latitude never before attained on land or sea had been reached, and for the first time in three centuries Britain yielded to another nation the honors of the Farthest North. Over a hundred miles of new shore, never before trodden by the foot of man, were added to the coast-line of Greenland.

"To the westward the Polar Ocean had been reached by the crossing of Grinnell Land; while the interior of that country had been surveyed, its physical geography determined, and the outlines of its north-western coast fixed with tolerable certainty."

A really admirable record, it must be granted, and one of which Greely and the men with him had every reason to feel proud. Unfortunately, the majority of them did not long enjoy the honors they had so hardly won; for although dark days had already befallen them, darker still lay ahead.

August found the explorers at Fort Conger ready for departure, the relief-ship not having arrived; but a gale delayed the start of the retreat till the following day. Then the party, consisting of twenty-five men in all, abandoned

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the station where for two years they had lived together. Turning their faces southwards, they hoped that they might fall in with a ship or reach Littleton Island, on which a depot had been established.

Cape Baird, at the mouth of Lady Franklin Sound, was reached after one day's journey. There a cairn was erected, and in it was deposited information with regard to the expedition and its movements. Stores having been taken on board, the journey was resumed, the steam-launch having in tow the three other boats. They were provided with forty days' rations.

It was not long before the treacherous ice had the retreating band completely at its mercy, blocking the passage that led to safety, and retarding their progress when every hour was of vital importance. Frequent fogs and snowstorms soaked the travelers to the skin, as they crouched in shivering misery in the open boats. It is not necessary to enter into the details of those terrible days and nights during which Greely and his comrades suffered and struggled together. Still they set their faces southward and continued on.

The outlook was gradually becoming darker. The cold weather was setting in earlier than usual; the new ice was already forming, and

although the commander was keeping his thoughts to himself, he had come to the conclusion that there would be no more open water that year.

To facilitate their progress over the ice, the steam-launch was left behind on the floe, and with the sledges heavily laden the brave explorers continued their journey. By the end of September the party at last reached the shore, landing at Eskimo Point. "The retreat from Fort Conger to Cape Sabine," adds Greely, "involved over four hundred miles of travel by boat, the greater part of which was made in circumstances of such great peril as to test to the utmost the courage, coolness, and endurance of any party. It is scant justice to say that my officers and men faced resolutely every danger, and endured cheerfully every hardship."

Preparing to camp at Eskimo Point for the winter, Greely estimated that there were rations to last for thirty-five days, and from stores deposited at Cape Sabine and other places he hoped to add materially to the supplies.

Sergeant Rice was despatched to Cape Sabine, and returned, with both good and bad news. He reported that at various depots near Sabine there were from ten to twelve thousand pounds of rations. A record left at Sabine explained the reason for the non-return of the

Proteus. It had been nipped in the ice between Cape Sabine and Cape Albert, while attempting to reach Lady Franklin Bay. "The time," wrote the lieutenant, "was so short that few provisions were saved." The letter added: "All saved from the *Proteus*. The U. S. steamer *Wantic* is on her way to Littleton Island, and a Swedish steamer will try to reach Cape York during this month. I will endeavor to communicate with these vessels at once; and everything within the power of man will be done to rescue the brave men at Fort Conger from their perilous position."

On the receipt of this communication, Greely determined to leave their winter quarters at Eskimo Point, push on to Cape Sabine, and await there the promised help, which he did not doubt was already on its way. They had at this time four boats, Greely says, and although the sun was about to leave them for the winter, they could yet travel southwards, there being open water visible at Cape Isabella.

Transferring their camp to the neighborhood of Cape Sabine in October, the party built houses and settled down in them in good spirits, in expectation of a speedy release. But before the long-delayed relief found its way to this frozen region, nearly all the party had passed beyond the reach of help.

From the very beginning of the stay at Camp Clay, as the place was named, the food was served out carefully, for it was necessary to take every precaution, and so to apportion the supplies that they would last till the spring. With the view of adding a little to the daily rations, Greely determined to send a small party to Cape Isabella, forty miles to the southward, where Nares in 1875 had stored some beef.

Rice, Frederick, Elison, and Lynn volunteered for the task, and reached their destination after four days' hard travelling. Ascending to a height, they gazed southward as far as the eye could reach; the brilliant light of the moon revealed to their astonished eyes a vast stretch of open water, the white-capped waves dancing in the moonlight. There, before them, lay the path to safety and home.

Taking up the meat, the four men turned their faces towards Camp Clay, tramping across the rough ice at a reduced pace because of their own feebleness and the additional burden of their sledge. By the time they reached the place at which they had last camped on their outward journey, Elison was suffering terribly from the cold, both hands and feet being badly frost-bitten. Each of them taking a hand, Frederick and Rice tried to impart some of their warmth to the frozen limbs of their companion;

but there was little alleviation of the pain, and in his agony the poor fellow lay crying all night.

When the march was resumed in the morning, Elison was but little better; and Frederick, supporting him as he walked, had almost to carry him along. All day long they pushed slowly ahead.

Matters reached a crisis the following morning. Utterly helpless, Elison required more than ever the assistance of his comrades; and as it was quite impossible to bring him to a place of safety and to carry the meat at the same time, it was resolved to abandon the food. Leaving it, with a rifle stuck in the ice to mark the spot, they trudged along with all available speed, reaching the old headquarters at Eskimo Point after a ten hours' march.

By this time Elison was in a pitiable condition. Not only had his clothing become a sheet of ice, but the frost had gone deeper into his hands and feet; and when a little heat had been obtained, and his frozen limbs began to thaw, he suffered terrible agony.

The next day they were again on the road, Elison stumbling and falling in his attempt to walk behind the sledge. At last they came to a halt at the hill between Baird Inlet and Rosse Bay. Elison could no longer stand; and his weakened companions were quite unable to haul

him up the incline. Something had to be done without delay; and Rice boldly set out for Camp Clay to bring help, while the other three crept into their sleeping-bag, exposed to the full fury of a biting gale, to await his return as best they could.

Eating a little frozen beef by the way to maintain his strength, Rice manfully faced the trying journey to the camp, fifteen weary miles away. Across Rice Strait he travelled in the darkness, the new ice cracking and bending beneath his feet as he walked.

At midnight Greely was awakened by the sound of staggering footsteps, and he sprang up to hear from the frozen lips of the exhausted traveler that Elison was dying in Rosse Bay. Without loss of time Brainard and Christiansen, carrying food and brandy to relieve the needs of the three men, were hastening over the frozen track, followed two hours later by Lieutenant Lockwood, Dr. Pavy, and four of the strongest men with the large sledge.

Meanwhile, things were going badly with the men out on the ice. The sleeping-bag froze solid in a few hours; and, unable to move, the three helpless men lay in one position for eighteen hours. When the relief arrived, they had to be cut out of their place of retreat. Camp was reached without further mishap, and

though Elison's life was despaired of, he made a wonderful recovery.

Speaking of this journey, Greely says: "The half-starved, enfeebled party of eight men made a journey of nearly forty miles in forty-four hours. They travelled in darkness over rough and heavy ice. They had been on reduced rations for over two months, and although unfit for the most ordinary service, they ventured their lives cheerfully on the barest possibility of rescuing a comrade."

Existing on a daily ration hardly sufficient to support life, Greely and his men passed a miserable winter. To lift, if possible, the thoughts of the party from their sufferings, Greely lectured each day upon the physical geography and resources of the United States, although the effort was a great strain upon him in his exhausted condition.

The new year (1884) opened without any change in the circumstances. In January death visited the camp for the first time, one of the men succumbing to a severe attack of scurvy. In February, Rice and Jens left for Littleton Island in the hope of finding a depot with supplies. Most of the party believed that Lieutenant Garlington was there with ample stores from the *Wantic*. In the event of Littleton Island yielding no assistance, Rice was to con-

tinue his journey, and bring help from the Etah Eskimos, who had shown much kindness to Kane and Hayes.

After an absence of four days, Rice and Jens returned, reporting that they had found open water, extending as far into Kane Sea as the eye could reach; and that at no time was the Greenland shore visible.

Failure to reach Littleton Island was intensely disappointing to Greely. There was, however, just a possibility, he announced, that Smith Sound would freeze over by the beginning of March, and give them a chance to escape. But when that time came they were unable to leave their camp. "The fates seem to be against us," Greely wrote on the 13th; "an open channel, no food, no hopes from Littleton Island. If we were now the strong, active men of last autumn, we could cross Smith Sound; but we are a party of twenty-four starved men, of whom two cannot walk, and half-a-dozen cannot haul a pound."

The month of April was not far advanced before it became obvious that the end was in sight. The few ounces of food doled out each day did practically nothing to stem the ravages of hunger.

As a last desperate chance, Rice and Fredrick started out for Baird Inlet with the view

of recovering the beef deposited there in the preceding November, when it was left behind owing to the break-down of Elison.

Realizing the dangerous nature of this undertaking, Greely had refused his consent when it was first suggested by Rice and Frederick; but at length he withdrew his opposition, and the two men left on their quest at midnight, their comrades sending after them a feeble cheer to encourage them on their way.

It was no easy task which the heroic fellows had undertaken; but they were prepared to face the risks. They were frequently in danger owing to the deep snow, falling into the drifts, and escaping from them only with difficulty. The wind swelled into a gale, driving the snow into their faces, and making it impossible to light a lamp when they encamped the next evening. Without tea or drink of any kind, they were compelled to take to their sleeping-bag, eating only a few ounces of frozen pemmican as they lay down on the ice to rest. Soon the drifting snow covered them with a mantle of white; and the storm continuing, they were unable to leave their bag for twenty-two hours.

Reaching Eskimo Point, they dropped the sleeping-bag and some of the rations, and with lightened sledge pushed on to the place where the meat had been abandoned, now only six



SITTING IN HIS SHIRT-SLEEVES, HE HELD HIS FRIEND
IN HIS ARMS

miles distant. But again a gale sprang up, and the driving snow not only chilled their bodies, but obscured their view, so that they stumbled on without seeing what lay ahead. Yet they manfully persevered till they reached their goal. There they searched long and earnestly for the meat upon which so much depended; but they could not find it, and they turned sadly away from the scene of their disappointment.

They had not gone very far before Rice showed signs of collapse. Preparing some warm food and drink, Frederick gave it to his companion, and then tried to persuade him to continue the march to avoid freezing where he sat. But all his appeals were in vain. Rice could not stand up; and he lay back on the sledge to await the end, which appeared to be very near. Removing some of his own clothing, in spite of the storm of wind and snow, Frederick tenderly wrapped the garments round the suffering man; and sitting on the sledge in his shirt-sleeves, he held his friend in his arms till his eyes closed in death.

Alone on that vast ice-field, chilled with cold and weak with hunger, it seemed as if Frederick, too, must lie down in the dazzling snow, and follow his comrade into that sleep which knows no waking. He was too weary to care what happened; and he felt that it would be

easier to die than to struggle on in wretchedness and despair. But suddenly there came into his mind the thought of the men at Cape Sabine eagerly awaiting his return; and rousing himself into action, he made his lonely way to Eskimo Point, and wearily crept into his sleeping bag. Strengthened somewhat by the rest and a little food, he returned next morning to the scene of death, and after burying his dead comrade in the snow, he began his long march back to camp, dragging the sledge after him.

Throughout this terrible expedition Frederick was conspicuous again and again for his courage and loyalty; but nothing so revealed the true greatness of the man as his refusal, in the face of his own great need and danger, to touch one morsel of the food that had been apportioned to his dead comrade. He brought it back untouched so that, small as it was, it might help to swell the scanty supply on which hung the lives of all.

The month of June was now approaching its end. The few who were left were hovering on the brink of the grave. It seemed as if the story of the ill-fated Franklin Expedition was about to be repeated, and that not one man would be left to tell the tale of the long days of misery and starvation.

But relief was at hand. Near midnight of

the 22nd, a sound like that of a steamer's whistle reached Greely's listening ears, and though he could hardly believe that any ship would venture along the coast in such a gale as was then blowing, he asked Brainard and Long to step outside and see whether anything was in sight. Their mission was fruitless; the momentary spark of hope was extinguished, and again the gloom of despair had settled down upon them. Suddenly strange voices were heard; and the seven survivors knew that at last the hour of their deliverance had dawned.

The expedition, under Captain W. S. Schley, commanding the *Bear* and the *Thetis*, despatched in search of Greely had found him; and the small band that had been snatched from the brink of the grave were nursed back to health and strength.

XII

THE NORTHEAST PASSAGE DISCOVERED

THE numerous expeditions which had ventured into the Arctic seas had hitherto failed to overcome the barrier of ice which, like a giant sentinel, guarded the way to the Pole; but they were not by any means barren of achievement. Each expedition added something to the record of discovery.

In 1873 a vast archipelago, to which the name of Franz Josef Land was given, was discovered by an Austro-Hungarian Expedition, under the leadership of Payer and Weyprecht. On a voyage, in 1872, to discover the Northeast Passage, their ship, the *Tegetthoff*, was gripped in the ice in her endeavor to pass round the north end of Novaya Zemlya, and remained fast in her prison in spite of all efforts to release her. For a year the *Tegetthoff* was unable to escape, and drifted with the pack in darkness, cold and solitude.

Often it seemed as if the ship must be crushed to powder, for the ice pressed around her on every side till her timbers groaned and cracked. On such occasions the men would be summoned

on deck to be ready for any emergency. "Ever nearer came the rushing, rattling sounds, as if a thousand heavy wagons were being driven over rough roads. Close under us the ice began to tremble and to moan, and as the fury of the conflict increased, the shattered portions of the floes were rolled up into heaps."

On August 30, 1873, occurred the discovery which made the voyage memorable. One day had been so like another that the monotony of life in the icy prison had affected the spirits of all; but in an instant the whole scene was changed.

Shrouded in mist, through which the rays of the sun occasionally penetrated, the *Tegetthoff* was slowly gliding with the moving mass. Suddenly the fog vanished, and there to the astonished gaze of those on deck stood revealed, far off in the northwest, "the outlines of bold rocks, which in a few minutes seemed to grow into a radiant Alpine land." For a moment the onlookers stood transfixed, and then they burst into shouts of joy—"Land, land, land at last!"

After all, the expedition had not been a failure. This land, which had remained unknown for thousands of years, had been added to the geography of the world. It was named by the discoverers Franz Josef Land, in honor of their emperor.

Two visits were made to this new Arctic territory in the early days of November; but it was not till the following spring that explorations could be conducted. Sledge journeys commenced in March and terminated in May, 450 miles having been surveyed in that time.

As the *Tegetthoff* remained firm in the ice, it was at last resolved to abandon her, and to return to Europe in sledges and boats. So, the officers and crew turned their backs on the vessel that had been their home for two years.

It was a hard, hard struggle to which they had committed themselves. Many times it seemed as if they would never reach the great world beyond with the news of their wonderful discovery.

Travelling was so difficult that the least progress filled the weary men with thankfulness. Around them the ice lay closely packed; and often they had to wait for a week in their boats till the mass separated sufficiently to give them a passage through. All the time the food was diminishing, and as the days went by the outlook became darker and darker.

The difficulties were almost incredible. "After the lapse of two months of indescribable efforts," Payer relates, "the distance between us and the ship was not much more than a couple of miles! All things seemed to say that,

after our long struggle, there remained for us nothing but a return to the ship and a third winter there."

Fortunately, however, this gloomy prediction was not fulfilled. Another month of alternate rowing and sledging took them beyond the great barrier, where they fell in with a couple of Russian schooners. The explorers, after ninety-six days in the open air since abandoning their ship, were now free from danger, and able to return and tell the story of their great discovery.

The explorations begun by Payer and Weyprecht were continued a few years later by B. Leigh Smith, who in June, 1881, sailed from Peterhead in the *Eira*, a steamer of 350 tons, constructed of extremely hard wood, and specially adapted for navigation in the ice.

Still further explorations in Franz Josef Land were conducted by the Jackson-Harmsworth Expedition in 1894-97. Under the command of a young Englishman, Frederick G. Jackson, the explorers sailed from the Thames in July 1894, with the object of making a scientific exploration of the land, about which very little was yet known.

Up to this time only some parts of its southern shores had been explored. It seemed reasonable to expect that the archipelago, should

it be found to stretch far to the north, would afford an excellent base from which to extend operations to the Pole.

The hope of reaching the Pole had, however, to be abandoned, the land being found to consist of innumerable small islands without any continuous mass of land. The energies of Jackson and his scientific staff were, therefore, concentrated on an examination of the archipelago.

Establishing his winter quarters, on September 8, at Cape Flora on Northbrook Island, Jackson built a hut there, to which he gave the name of Elmwood. There the provisions were stored, and there the party passed three winters. During the first winter the exploring vessel, the *Windward*, remained ice-bound in the immediate vicinity. In the three succeeding summers it visited the station with supplies and reinforcements. Though the members of the expedition had thus opportunities to return, they decided to remain till they had accomplished their task, spending a thousand nights in the Arctic regions.

On the ice, near Elmwood, occurred a dramatic meeting between Jackson and Nansen, the latter, accompanied by his companion, Lieutenant F. H. Johansen, having spent the preceding winter in the north of Franz Josef



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AN ARCTIC EXPLORER COMING OUT OF HIS IGLOO WHERE
HE SPENT THE WINTER

Land. The men approached each other eagerly.

"Aren't you Nansen?" asked Jackson, after the two men had warmly greeted each other.

"Yes, I am," replied the Norwegian. "And he seized my hand," says Nansen in his description of the meeting, "and shook it again, while his whole face became one smile of welcome."

Nansen was delighted with the reception given to him and his comrade. They could not have fallen into better hands, he afterwards said, meeting with "unequalled hospitality and kindness" on all sides. They remained at Elmwood till the arrival of the *Windward*, and sailing on board that vessel, were landed safely in Norway.

The time spent at Cape Flora passed very pleasantly, and without the hardships endured by so many of the earlier expeditions. The work of exploration was steadily carried on, relieved now and then by encounters with bears. In one of these encounters Jackson narrowly escaped with his life.

"I came across a bear close to the open water, with the dogs yelping around him and he roaring and making dashes at them," he wrote in describing the incident. "Going up to within ten yards of him, I wounded him in the neck, but not sufficiently to stop him.

"He reluctantly took to the water; but as it

had a thickness of an inch of ice upon it, and was consequently difficult to swim through, he came out again and started across the floe at a good pace. The dogs and I followed. Every now and then he would stop to rush at one or other of the dogs, which, however, managed to dodge him.

“As he appeared to be distancing me, I fired another shot. Whether it hit him or not I cannot say; but it had the effect of making him head back again towards the open water. As I had started out with only three cartridges, I had now only one left, so that on coming up with him again at the edge of the floe, I was particularly anxious to make sure of a fatal shot.

“I found him about thirty yards from the water, which was covered with very thin ice. Wishing to make certain of him, I went up to within six or seven yards of him, when he rushed at me with his head low. I fired; but just as I did so, he threw his head up, causing the bullet to go between his forelegs.

“He came at me with a roar and his mouth wide open, and in a second he was upon me. I could feel his warm breath upon my face; could see the gleam of his teeth, the shape of his long, gray tongue, and the fierce glare in his savage eyes. I had just time to remove the rifle from

my shoulder, and to thrust the barrel with all my force into his open jaws, and then draw it back for another thrust. It was a trifle too much for him, apparently, for he whipped round and took to the water. I had now reluctantly to throw up the chase, for I had no more cartridges."

Another notable accomplishment is that of the Swedish explorer, Nordenskiöld, who, in 1878, discovered the Northeast Passage.

We have already seen how the navigators of earlier centuries had sought for some route to the west that would connect Europe with India. But their efforts, bold and daring as they were, ended in disappointment. Nordenskiöld succeeded in the opposite direction; succeeded, too, without meeting with any serious difficulty, and without undergoing any of the hardships which had befallen the earlier explorers.

On his return in 1876 from an expedition to the Siberian Polar Sea, Nordenskiöld expressed his belief that the open, navigable water, which had carried him across the Kara Sea to the mouth of the Yenisei, extended, in all probability, as far as Behring Strait. And if so, the circumnavigation of the Old World was within the bounds of possibility.

Nordenskiöld laid his plans before the King of Sweden, and with the approval of his sov-

ereign and the support of leading men of science, the enterprise was soon arranged.

The steamer *Vega* was purchased for the voyage and sailed in July, 1878. The vessel rounded Cape Chelyuskin, the most northerly point of the Old World, but in pushing farther on found the ice rather troublesome. This difficulty gradually increased, until, in September, the *Vega* anchored on a grounded floe-berg near to Behring Strait.

It was thought at first that the stay would be only temporary; but it soon became evident that no release from the ice could be expected that autumn, and accordingly the explorers settled down to pass the winter there.

Not till July of the following year was the ship released. Then it was suddenly observed that the *Vega* was moving slowly. Two hours later the ship was under steam.

Pursuing her way towards Behring Strait, the *Vega* passed Cape Serdze Kamen on the 19th; and on the following day they were in the middle of the sound which unites the North Polar Sea with the Pacific, from which point they greeted the Old and the New Worlds with a salute of victory.

"Thus," says Nordenskiöld, "we reached the goal towards which so many nations had struggled, from the time when Sir Hugh Willoughby

ushered in the long series of Northeast voyages. Now, for the first time after the lapse of 336 years, and when most men experienced in sea-matters had declared the undertaking impossible, was the Northeast Passage at last achieved. This has taken place without the sacrifice of a single human life, without sickness among those who took part in the undertaking, and without the slightest damage to the vessel."

XIII

NANSEN AT THE "FARTHEST NORTH."

WE have already noted the meeting of Nansen with other explorers on Franz Josef Land. He was one of the most famous of Arctic explorers, and set a new northern record.

It was in 1893 that Dr. Fridtjof Nansen first started off on the search which had lured so many ambitious travelers. Never before, probably, had Arctic explorer set out so admirably equipped. For nine years previous to his departure—beginning when he was twenty-three years old—Nansen had been considering his plans. Nothing was left to chance. As a result he penetrated much farther towards the Pole than any man had done before, and returned to civilization, after an absence of three years, without having to record a disaster or a serious accident of any kind.

For the great task which he had undertaken, Nansen seemed the ideal man. He was a trained athlete, an expert snow-shoe traveler, and a scientist of considerable attainments. Born near Christiania, in Norway, educated at its uni-

versity, he was only twenty-one years of age when he took a trip to East Greenland for zoological specimens.

In 1888 he made his memorable journey over the Greenland ice-plateau. He lived with the Eskimos during that winter, sleeping in their rude huts and becoming accustomed to their manner of living. He thus laid up a valuable store of experiences, which made a fitting preparation for the work of the coming years. When the time came, he was able to live just like the Eskimos, and to this fact he probably owed his life.

Believing in the theory of a drift from east to west, Nansen boldly announced his intention of putting that theory to the test, declaring that a vessel which got frozen in to the north of Siberia must drift across the Polar Sea, and out into the Atlantic.

Nansen himself made the model for the *Fram*, which was regarded as the strongest vessel ever used in Arctic exploration. The hull, round and slippery like an eel, with no corners or edges to give a grip to the ice, was specially designed for ice-pressure. The inventor's theory was that, when the ice closed round the ship, she would not be crushed to matchwood, but would be lifted on to the floe, on which her flat bottom would enable her to rest without fear of capsizing.

Experts laughed at the idea. Nothing, they declared, could save the *Fram* from destruction when in the embrace of the frozen masses; but their grim predictions were not fulfilled. The *Fram* behaved, when put to the test, just as Nansen said she would, and rested safely on the ice when there was no longer water in which to float.

Nansen sailed from Christiania on board the *Fram*, in June, 1893, accompanied by twelve of his hardy countrymen. Leaving the shores of Norway behind, they pursued their way northwards, and on July 25, sighted Novaya Zemlya. A thick fog prevailed at the time, and instead of making for land, as had been intended, the course was set eastwards towards Yugor Strait.

Two days later, while they were still enveloped in fog, the first ice was encountered. There was little of it to begin with; but the following morning, as far as the eye could reach—the fog having lifted—the ice extended everywhere—a bad lookout for such an early period of the season.

Forcing her way through, and already revealing her splendid qualities among the frozen masses, the *Fram* reached Yugor Strait, and passed into the dreaded Kara Sea early in August.

The whole story of his adventurous quest is told in his "Farthest North"*—much of it in diary form. It is one of the most fascinating of travel books in its picturesque descriptions.

This is the record of August 26th: "Many new islands in various directions. Any number of unknown islands, so many that one's head gets confused in trying to keep account of them all. In the morning we passed a very rocky one, and beyond it I saw two others. After them land or islands farther to the north and still more to the northeast. We had to go out of our course in the afternoon, because we dared not pass between two large islands on account of possible shoals. The islands were round in form, like those we had seen farther back, but were of a good height. Now we held east again, with four biggish islands and two islets in the offing. On our other side we presently had a line of flat islands with steep shores. The channel was far from safe here. In the evening we suddenly noticed large stones standing up above the water among some ice-floes close on our port bow, and on our starboard beam was a shoal with stranded ice-floes. We sounded, but found over twenty-one fathoms of water."

* The quotations in this chapter are made by permission from "Farthest North," by Dr. Fridtjof Nansen. Copyright, 1897, by Harper & Brothers.

Nansen had always said that if they could get safely across the Kara Sea and past Cape Chelyuskin, the worst would be over. Fortune was with the explorers, the navigation of the Kara Sea being much easier than they had anticipated; and early in September, Cape Chelyuskin, the northernmost point of the Old World, was safely passed. They had thus avoided the danger of a winter's imprisonment on that coast; and before them the way lay clear to their goal, the drift-ice to the north of the New Siberian Islands.

Steaming along the west of these islands, Nansen found himself puzzled with regard to the movements of the ice. "How in the world," we find him asking in his diary, "is it not swept northwards by the current which, according to my calculations, ought to set north from this coast, and which we ourselves have felt? And it is such hard, thick ice—has the appearance of being several years old. Does it come from the eastward, or does it lie and grind round here? I cannot yet tell; but, anyhow, it is different from the thin, one-year-old ice we have seen until now in the Kara Sea and west of Cape Chelyuskin."

On September 12, he writes: "Henriksen awoke me this morning at six with the information that there were several walruses lying on a floe quite close to us. 'By Jove!' Up I jumped

and had my clothes on in a trice. It was a lovely morning—fine, still weather; the walruses' guffaw sounded over to us along the clear ice surface. They were lying crowded together on a floe a little to landward from us, blue mountains glittered behind them in the sun."

Body to body the walruses stretched on a small floe, old and young mixed. Enormous masses of flesh they were! Now and again one of the ladies fanned herself by moving one of her flippers backward and forward over her body; then she lay quiet again on her back or side. "Good gracious! what a lot of meat!" said Juell, who was cook. More and more cautiously they drew near as Nansen made ready with the gun. Henriksen took a good grip of the harpoon shaft, and as the boat touched the floe he rose, and off flew the harpoon. But it struck too high, glanced off the tough hide, and skipped over the backs of the animals. Now there was a lively rumpus. Ten or twelve great faces glared around at once; the colossal creatures twisted themselves round with incredible celerity, and came waddling with lifted heads and hollow bellowings to the edge of the ice near the hunters. It was undeniably an imposing sight; but Nansen brought his gun to his shoulder and fired at one of the biggest beasts, bringing it down.

On September 22, the *Fram's* progress was

finally blocked. Three days later, when the ice had closed around her, Nansen expressed the opinion that they were now frozen in for good; and he did not expect to get the *Fram* out of the ice till they were on the other side of the Pole, nearing the Atlantic Ocean.

Now began the long, weary imprisonment that was to end they knew not how. Would the *Fram*, if she survived the ice-pressure, drift in the direction which they anticipated, or was there awaiting them a fate which they were afraid even to contemplate? These were questions to which no answer could be given. All they could do was to wait with patience and calmness to see what the long Arctic night would bring to them.

As the days went by, the *Fram* proved a safe and comfortable home. With a noise like thunder, the ice pressed against her stout sides, piling itself up in great walls and threatening destruction to the expedition. But to all attacks the *Fram* offered a stubborn resistance, and the men on board rejoiced in their security.

Only twice during the prolonged stay amid the ice did the crew fear the consequences of the pressure. On one of these occasions the situation became so alarming that sledges and provisions were placed upon a neighboring floe in preparation for the worst; but their fears proved

groundless. As Nansen afterwards said, "The *Fram* was stronger than our faith in her."

While the days on board the *Fram* were passed in comfort, they were monotonous; but to the commander of the expedition they were full of anxious thought. The vessel drifted slowly with the ice; but the drift for a time was southwards, and Nansen was naturally much concerned at this. It was not the direction in which he desired to go. He had not calculated upon moving to the south; and at the beginning of November we find him in a despondent mood. Sitting "in the still winter night on the drifting ice-floe," with only the stars above him, he sorrowfully confesses that his plan has come to nothing.

Nevertheless, he persisted in his plan of keeping away from land. He cast his fortunes, instead, with the drifting ice.

"Earlier Arctic explorers," he says, "have considered it a necessity to keep near some coast. But this was exactly what I wanted to avoid. It was the drift of the ice that I wished to get into, and what I most feared was being blocked by land. It seemed as if we might do much worse than give ourselves up to the ice where we were—especially as our excursion to the east had proved that following the ice-edge in that direction would soon force us south again. So in the meantime we made fast to a great ice-

block and prepared to clean the boiler and shift coals. We are lying in open water, with only a few large floes here and there; but I have a presentiment that this is our winter harbor."

A little later he writes: "Now we are in the very midst of what the prophets would have had us dread so much. The ice is pressing and packing round us with a noise like thunder. It is piling itself up into long walls, and heaps high enough to reach a good way up the *Fram's* rigging; in fact, it is trying its very utmost to grind the *Fram* into powder. But here we sit quite tranquil, not even going up to look at all the hurly-burly, but just chatting and laughing as usual."

Trying as these days were, they were not without their compensations; for it was while the *Fram* was slowly drifting with the ice-pack that Nansen made what is regarded as the greatest discovery of the voyage—"the existence of a wide, deep sea towards the Pole, a continuation of the Arctic Sea, situated between Greenland on the one hand, and Norway and Spitzbergen on the other."

A northerly drift at last setting in, the *Fram* was gradually carried to latitude $83^{\circ} 59'$, at which point Nansen left her, to continue his way Poleward on foot, after handing the ship over to the command of Captain Sverdrup.

Nansen's companion on his sledge journey was Lieutenant Johansen. It was a hazardous undertaking to cut themselves off from the ship and to wander out into the unknown. There were certainly hardships ahead; there were innumerable difficulties and dangers, and there might even be death. But Nansen and his companion were not afraid to take the risks, and with dogs and sledges they set out from the *Fram*. They proposed to travel northwards for fifty days, as they had only provisions to last for a hundred days, which was all they could carry over the rugged ice-floes.

For the first week the progress was most satisfactory. The ice was good and traveling was easy. These favorable conditions, however, did not last. The flat track soon gave way to rough and uneven ice, involving an expenditure of physical energy that tried the travelers to the utmost.

On May 20, 1895, he writes: "Went out on snow-shoes in the forenoon. The ice has been very much broken up in various directions, owing to the continual winds during the last week. The lanes are difficult to cross over, as they are full of small pieces of ice, that lie dispersed about, and are partly covered with drift-snow. This is very deceptive, for one may seem to have firm ice under at places where, on sticking one's

staff in, it goes right down without any sign of ice. On many occasions I nearly got into trouble in crossing over snow like this on snow-shoes. I would suddenly find that the snow was giving way under me, and would manage with no little difficulty to get safely back on to the firm ice."

Sometimes they were almost asleep as they wearily dragged the sledges along, pulling for nine or ten hours each day, often in the face of blinding snowstorms, with the floes in constant motion and grinding against each other with a loud and terrifying noise.

By the beginning of April it was obvious that it would be impossible to reach the Pole over such ice as they were then encountering; and the two travelers seriously considered the advisability of turning back. They, however, resolutely kept their faces to the north for some days longer, meeting with ridges on their toilsome way, and sometimes falling into the water.

On April 8, the prospect was still forbidding. From the highest hummocks nothing was to be seen but "a chaos of ice-blocks stretching as far as the horizon." With the feeling that they were sacrificing valuable time and achieving little, Nansen decided to stop, and to shape their course for Cape Fligely. They were then in latitude $86^{\circ} 13.6'$, only 261 miles from the Pole, and 195 miles nearer to it than man had ever stood before.

It was hard to give up; but at the rate at which they were then advancing it would have taken at least two months more to reach the Pole, and with only two weeks' supply of food left, it would have been suicide to go on.

When they turned southwards, open waterways and wet snow delayed their march. There was no sign of land in any direction, and no open water; and the number of the dogs, as they were killed to feed their companions, was rapidly growing less.

The middle of June found them plodding on, not knowing where they were; and there were moments when it seemed impossible that "any creature not possessed of wings could get farther." The provisions were dwindling, the sledges ran heavily in the snow, and things were getting worse instead of better. But never for a moment did the two men think of yielding.

They had many escapes as they fought their way together. On one occasion a large bear had been following them unobserved for some time; and they had a lively session, as Nansen graphically describes:

"After having cleared the side of the lane from young ice and brash, I drew my sledge to the end of the ice, and was holding it to prevent it slipping in, when I heard a scuffle behind me, and Johansen, who had just turned round to

pull his sledge flush with mine, cried, 'Take the gun!' I turned round and saw an enormous bear throwing itself on him, and Johansen on his back. I tried to seize my gun, which was in its case on the fore-deck, but at the same moment the kayak slipped into the water. My first thought was to throw myself into the water over the kayak and fire from there, but I recognized how risky it would be. I began to pull the kayak, with its heavy cargo, on to the high edge of the ice again as quickly as I could, and was on my knees pulling and tugging to get at my gun. I had no time to look round and see what was going on behind me, when I heard Johansen quietly say, 'You must look sharp if you want to be in time!'

"Look sharp? I should think so! At last I got hold of the butt-end, dragged the gun out, turned round in a sitting posture, and cocked the shot-barrel. The bear was standing not two yards off, ready to make an end to my dog, 'Kaifas.' There was no time to lose in cocking the other barrel, so I gave it a charge of shot behind the ear, and it fell down dead between us.

"The bear must have followed our track like a cat, and, covered by the ice-blocks, have slunk up while we were clearing the ice from the lane and had our backs to him. We could see by the trail how it had crept over a small ridge just behind

us under cover of a mound by Johansen's kayak. While the latter, without suspecting anything or looking round, went back and stooped down to pick up the hauling-rope, he suddenly caught sight of an animal crouched up at the end of the kayak, but thought it was 'Suggen;' and before he had time to realize that it was so big he received a cuff on the ear which made him see fireworks, and then, as I mentioned before, over he went on his back. He tried to defend himself as best he could with his fists. With one hand he seized the throat of the animal, and held fast, clinching it with all his might. It was just as the bear was about to bite Johansen in the head that he uttered the memorable words, 'Look sharp!' The bear kept glancing at me continually, speculating, no doubt, as to what I was going to do; but then caught sight of the dog and turned towards it. Johansen let go as quick as thought, and wiggled himself away, while the bear gave 'Suggen' a cuff which made him howl lustily, just as he does when we thrash him. Then 'Kaifas' got a slap on the nose. Meanwhile Johansen had struggled to his legs, and when freed had got his gun, which was sticking out of the kayak hole. The only harm done was that the bear had scraped some grime off Johansen's right cheek, so that he had a white stripe on it,

and had given him a slight wound in one hand; 'Kaifas' had also got a scratch on his nose."

When they reached the open water on August 6, Nansen and Johansen took to their kayaks. Gliding before the wind, they skirted along the shores of several glacier-covered islands. They landed on one of them four days later, and had the solid earth under their feet for the first time in two years. They had travelled 430 miles in four months.

Reaching the north end of Franz Josef Land—though the travelers did not know till months afterwards that it was there they had landed—Nansen and his companion lived through the long winter in a hut which they erected, and subsisted like the natives on bear, seal, and walrus. Fortunately this food did not fail them; but they suffered much from the cold.

Leaving their winter quarters in May, they started in a southwesterly direction along the land, intending to cross over to Spitzbergen at the nearest point. Proceeding southwards over the shore-ice, they sometimes found it possible to use a sail on their sledges, which skimmed along before the wind like boats on the water. In this way they made good progress, discovering new islands, and finding in this snow region much that was fascinating and mysterious.

Reaching the edge of the ice, they saw the

blue water spread invitingly before them. Lashing their kayaks together and hoisting the sail, they put to sea; and speeding along under a favorable breeze, they reached the south of the land on which they had been wintering so long. Putting in to the edge of the ice that they might relieve their stiffened limbs by walking, they fixed their tiny canoes to the ice, and ascended a neighboring hummock in order to obtain a view over the water.

Suddenly Johansen cried out that the kayaks were adrift. Both men ran to the edge of the ice with all speed; but by the time they reached it, the canoes were already drifting quickly away. Realizing that not a moment was to be lost, Nansen hastily threw off some of his outer garments and plunged into the ice-cold water. But it was hard work swimming with clothes on, and as the kayaks appeared to be drifting more quickly than he could swim, he was very doubtful of his ability to reach them. All they possessed was drifting from them on the slim boats, and Nansen well knew that life itself was in the balance. Johansen watched him all the time from the ice-edge in an agony of mind, but utterly unable to render any assistance.

Nansen fought his way through the water till his limbs stiffened and lost their feeling, and he was just on the verge of collapse when he reached

the kayaks. With difficulty he pulled himself on board; and he was so stiff with cold that he could scarcely paddle ashore. But having succeeded so far, he was determined not to fail now; and making a mighty effort, he brought the kayaks back to a place of safety, much to their united joy.

The next day found both men again on the water. They were nearer to the end of their troubles than they dared to hope; but their adventures were not yet over.

One day a huge walrus suddenly shot up beside Nansen, and, throwing itself on the edge of the kayak, tried to upset it with its strong tusks. In vain Nansen applied the paddle with all his might to the animal's head. The blows fell harmlessly; the deck was already under water, and the walrus was clearly having the best of the combat, when it turned around and disappeared as quickly as it had come. The kayak, however, had been injured in the struggle, and was leaking badly; and, to avoid sinking, Nansen ran it on to a ledge of ice.

In June, as described in the preceding chapter, Nansen fell in with Jackson, of the Jackson-Harmsworth Expedition, then exploring in Franz Josef Land. After remaining for some time with the English party, Nansen and his companion sailed in the *Windward*. They



WITH DIFFICULTY HE PULLED HIMSELF ON BOARD

reached Norway in August, and were welcomed with great enthusiasm.

Only one thing was required to complete the rejoicings. That was the safe return of the *Fram*, of which nothing whatever had been heard. Her arrival, however, was not long delayed, for only seven days later Nansen received a telegram from Captain Sverdrup, telling him that the *Fram* had arrived in good condition, and that all on board were well.

The adventures of the *Fram* after Nansen's departure can be told in very few words. At that time the vessel lay ice-bound. Little variation occurred in the drift during the next few months; but there were occasional disturbances in the ice, until in August the floe on which the vessel rested suddenly broke, and the *Fram* was again in the water.

There was now little probability that the *Fram* would drift farther to the north; and as the exploration of that region had been undertaken by Nansen and Johansen, Sverdrup felt that, in accordance with his instructions, he ought to make for open water and home. But though no longer imprisoned in the ice, they had still another winter to pass amid the floes. It went by without special incident and with the next summer the staunch ship was able to sail for home.

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What had the expedition accomplished? The Pole was still unconquered, but a wide sea of oceanic depth had been discovered; an area of 50,000 square miles of unknown waters had been traversed; the direction of the Polar currents had been ascertained, and Nansen's theories in great measure established; all previous records as regards nearness to the Pole had been surpassed; the *Fram* had more than justified Nansen's faith in her, and her stout timbers had fought a winning battle with the grinding floes; and Nansen and Johansen had performed a wonderful sledge journey into unknown regions.

This will remain as one of the most unique and successful of Polar expeditions.

XIV

THE NORTHWEST PASSAGE NAVI- GATED AT LAST

THE years that immediately followed Nansen's attainment of the "Farthest North" witnessed a remarkable rush of other expeditions. The Pole still lured men from home and country.

The methods which had been employed for centuries having failed to bring adventurous man to the Pole, Salomon Auguste Andrée, a Swedish professor and aeronaut, in 1895 laid before the Academy of Sciences a daring and novel project for exploring the regions of the North Pole with the aid of a balloon.

Andrée had been a member of a Swedish meteorological expedition that had passed a winter in Spitzbergen, and had directed experiments in atmospheric electricity. He had also held an important engineering position under the Swedish Government.

On a voyage to America, he had been impressed with the regularity of the trade-winds; and the possibility of balloon voyages across the Atlantic then occurred to him.

He interested others in his project for reach-

ing the Pole by balloon; and a national subscription, to which the King of Sweden liberally contributed, soon supplied him with the necessary funds. He constructed a large balloon, which he named the *Eagle*, and erecting a balloon-house on Dane's Island, Spitzbergen, he made everything ready for his enterprise, and waited for the south wind which was necessary for a start. The favorable breeze came on July 11, 1897; and with two companions, Nils Strindberg and Knut Fraenkel, he made the ascent. The balloon rose to a height of about 3000 feet, and disappeared from view in about an hour after leaving the earth. The start seemed auspicious.

"With a fairly strong wind," wrote one of Andrée's companions just before the start, "we shall make from ten to twenty knots an hour, and should reach the Pole in from thirty to sixty hours. Once having reached our goal, we don't care where the wind carries us. We would, of course, rather land in Alaska, near the Mackenzie River, where we should very likely meet American whalers, who are favorably disposed toward the expedition. But even if we were obliged to leave the balloon and proceed over the ice, we should not consider ourselves lost. We have sledges and provisions for four months, guns and ammunition; hence we

are just as well equipped as other expeditions have been."

Four days after the balloon's departure, a carrier-pigeon alighted on the rigging of the sealer *Alken*, then cruising in the vicinity of Spitzbergen. Attached to a tail-feather of the bird was a small tube, containing a message in the handwriting of Andrée as follows: "July 13, 12.30 P. M., latitude $82^{\circ} 2'$; longitude $15^{\circ} 5'$ east. Good progress. All well on board. This is the third pigeon dispatch.—ANDRÉE." This was the only message ever received from the occupants of the balloon.

As time went by and no further word was received, expeditions went in search of Andrée and his companions; but the quest was fruitless. Whether they landed in the sea and were drowned, or descended on the pack-ice and perished there, finding it impossible to sledge over the rough surface of the frozen water, will probably never be known.

In June, 1899, Prince Luigi, Duke of the Abruzzi, sailed from Christiania in the *Polar Star*, a strong whaling-vessel, with a well-equipped expedition, hoping, as so many had done before him, to reach the most northerly point in the world. Besides possessing great physical strength, the Duke was a man of scientific and scholarly attainments. Much of his boyhood

having been passed under the shadow of the Italian Alps, it was not strange that he should be lured to that point of the globe on which no man had ever stood.

One of his earliest and most daring adventures was to ascend, in 1897, to the summit of Mount St. Elias, one of the highest mountains of the Alaskan range. He was the first man who had ever reached the summit of that lofty mountain which is 18,000 feet high.

Before setting out on his Arctic expedition, the Duke spent two years in the preparation of his plans, consulting with Nansen, Nordenskiöld, and other Arctic explorers, and learning from their own lips the secrets of their successes and failures.

Proceeding to Franz Josef Land, the *Polar Star* was beached on Prince Rudolf Island, and there winter quarters were established.

In the following spring, sledge parties under Captain Cagni started on their way towards the Pole. In spite of tremendous difficulties, they reached in April latitude $86^{\circ} 33' 49''$, exceeding Nansen's record by eighteen miles, and planting the Italian flag well in front of all its rivals.

In the hard work of the expedition the Duke manfully took his share. During one of the preliminary sledge-trips in the spring, he had his right hand severely frosted, and two of his

fingers had to be partially amputated; but he remained cheerful and active, and did much to keep his men bright and happy amid the darkness of the long winter night.

Another explorer who strove hard, but in vain, to reach the Pole was Walter Wellman, an American traveler and journalist. In 1894 he led an expedition into the North, reaching latitude 81° north-east of Spitzbergen.

Four years later he again ventured into the frozen wilderness, making more progress on this occasion, when he attained latitude 82° , and discovered many islands. His party consisted of four Americans and five Norwegians, and their departure from the little town of Tromsø, in Norway, was made in June, 1898, in the steamer *Frithjof*, a staunch ship specially built for hard work in heavy ice.

This expedition was marked by a fortunate disaster which overtook Wellman's sledge party in Franz Josef Land in March, 1899, and which put a sudden end to the dash Polewards. At the time of the occurrence they had covered about 140 of the 700 miles which lay between their winter quarters and the Pole.

Falling into a crack in the ice, Wellman hurt his right leg. When the accident happened he regarded it as the worst of ill-fortune; but it was probably the means of saving all their lives

two days later, when an extraordinary upheaval of the ice occurred.

When that took place they were in the one spot from which it was possible to escape. Had it not been for the injury to Wellman's leg, they would have been able to travel faster than they did, with consequences that in all likelihood would have been fatal to all.

A few days later a terrible storm from the northeast burst over the little party; the air was filled with drifting snow, and all around them the ice opened in great cracks. The floe on which they stood tilted over, the one edge down in the sea, and the other up in the air. Hastening over the quaking pieces of ice and across a chasm, in which the water was running like a mill-race, they reached a larger floe, which offered them safety for the time being.

Though the party had escaped a terrible death, they had suffered serious loss. Some of the dogs were missing, and food, clothing, and instruments also had disappeared. Under these circumstances the dash to the Pole was ended, for it would have meant death to proceed farther.

Though defeated on this occasion, Wellman made one more attempt; but again he had to return without achieving the coveted distinction of finding the Pole. Emulating Andrée, he

started out in his airship, the *America*, from his headquarters at Virgo Bay, Spitzbergen; but beaten back by storms, he was forced on to a glacier, and there his undertaking had to be abandoned.

Although these expeditions had failed to attain their principal object a number of successes had been achieved.

Success crowned the attempt of the Norwegian seaman, Roald Amundsen, to navigate the Northwest Passage. The honor of its discovery had fallen to the men of Franklin's unfortunate expedition, who did not live to come back to tell of their achievement. In 1850, Sir Robert McClure also solved the problem of the Passage; but although the existence of a Passage was proved, it was doubtful whether it was practicable for ships, as no one had ever navigated it throughout.

When Nansen returned from this wonderful Greenland expedition in 1889, Amundsen, then a lad, stood with throbbing pulses among the crowds who welcomed back the popular hero; and as he listened to the tumultuous cheering, a voice seemed to whisper to him, "If you could make the Northwest Passage!"

That was the beginning of the idea, which remained with him till the great feat was accomplished. The time came when he went seal-

fishing; and later on he took part in the Belgian Antarctic Expedition, during which voyage he thought much about the dream of his boyhood, and began to lay his plans.

The voyage began in 1903 and lasted for three years. He set sail from Christiania in the *Gjoa*, a tiny craft built originally as a fishing boat. Excellent progress was made from the very beginning; and though ice was encountered, it was not heavy enough to cause any considerable delay.

On the night of August 31, the expedition almost came to a sudden and terrible end. The stillness of the night was broken by an awful shriek, which reached the commander's ears as he was entering in his journal the events of the day. Looking up, he saw a great flame, with thick, suffocating smoke, leaping through the engine-room skylight. Instantly he knew what it meant. The engine-room, where there were tanks containing 2200 gallons of petroleum, was on fire. If the fire should reach the tanks, the *Gjoa* and everything on board would be blown to atoms.

All hands set to work with feverish haste. The fire-extinguishing appliances, kept in readiness for such an emergency, were brought into play, and the men, knowing that their lives depended upon their exertions, worked with a

will, and pumped water on the fire till the danger was past.

Soon after this occurrence another misadventure befell the *Gjoa*. Running aground, the vessel was lifted up by the high, choppy sea and pitched upon the rocks. It seemed impossible for the ship to hold together, buffeted as she was by the wind and waves. So far as could be seen, there was no alternative but to abandon the *Gjoa* to her fate. Bumping on the bare rocks, she lay at the mercy of the angry breakers; but fortunately she slid off again into the water, and skilful navigation brought her safely away from the shoals that lay around and into deeper and safer water.

A couple of winters were passed among the ice in a little anchorage in King William Land, which they christened Gjoahavn; and there an observatory was built for the carrying out of the magnetic observations. The channels at last being open, the vessel left Gjoahavn in the summer of 1905; but in the following month the ice proved too powerful an enemy, and at King Point the third winter in the Frozen Land was passed. It was the summer of 1906 before the voyage was resumed, and the remainder of the famous Passage was then successfully navigated. The little ship skirted the northern shore of Alaska, reaching Cape Nome

180 N. W. PASSAGE NAVIGATED

on the last day of August. The route had taken them through Davis Strait, Baffin Bay, Barrow Strait, and a succession of other straits to Cape Parry and Franklin Bay. Truly a daring voyage worthy of the Vikings of old!

XV

PEARY'S TWENTY YEARS OF ARCTIC STRUGGLE

NO man ever struggled harder or with more persistence to reach the goal of his ambition than Robert Edwin Peary, the American Arctic explorer who was finally to receive this great prize of the conquest of the North Pole.

Eight voyages altogether Peary made into the Arctic regions, bravely facing their dangers, overcoming their difficulties, discovering their secrets, learning from experience how to cope with their peculiar conditions, improving the methods of sledging, and coming gradually nearer to the glittering Pole, until at last he has stood at the goal and planted there the flag of his country.

Other men have been baffled in the desolate wilderness of the North only to return to it, and to fight better because of their defeat; but none of them maintained the struggle as Peary did, or repeated it so often. His success did not come through chance, or easily. He won it through twenty years of struggle.

Peary's introduction to the Frozen North be-

gan in the year 1886, when he made the acquaintance of the Greenland ice-cap; and it was not long before he again answered the call of the North and returned to its frigid regions.

Sailing from New York, accompanied by Mrs. Peary and a party of five, in June, 1891, he established winter quarters on the eastern side of McCormick Bay. There the winter was passed in preparation for the land journey; and in April, 1892, accompanied by Eivind Astrup, Peary began his attempt to cross Greenland to the northeast. He successfully completed his journey at Navy Cliff, latitude $83^{\circ} 27'$, where he gained an unbroken and commanding view of the Arctic Ocean, proving that Greenland is an island. For this achievement he subsequently received the gold medals of the Royal Geographical Society of England and the National Geographical Society of America.

This was but the beginning of a series of expeditions, which while unsuccessful in their main object brought him a little nearer each time, or gave him valuable data for later work. By the spring of 1906 he succeeded in reaching $87^{\circ} 6'$ north latitude, or within 174 geographical miles of the North Pole, thus creating another "Farthest North" record.

This is but the briefest summary of what Peary accomplished before his final dash to the

Pole: but in order to know something more of the man, and of the hardships that he courageously endured, we will follow one or two of his expeditions in more detail.

Embarking upon his seventh voyage to the Arctic in 1898, Peary was determined not to return until he had reached the Pole. His plan was to establish a base as far north as possible, and thence to make a march towards the Pole with dogs and sledges. But before making this dash, he intended to send out parties to store provisions in depots along the route which he purposed following, so that with reduced burdens he might travel faster. He hoped by this arrangement to overcome the difficulty of having to carry sufficient food for men and dogs.

After encountering moving floes on the voyage, his ship, the *Windward*, was eventually stopped by the ice in Allman Bay, 250 miles south of Sherrard Osborne Fjord, the point Peary had hoped to reach before being shut in by the ice. Compelled by the state of the ice to give up the idea, Peary resolved to convey his supplies to Fort Conger. To reach it meant traveling by a route never before trodden by man, along exposed coasts, with the difficulties increased by the darkness of winter, which had now settled down.

Careful preparations having been made,

Peary with four companions started from Allman Bay; but hardly had he left the ship when it became evident that the difficulties were much greater than he had anticipated. A terrific storm of wind opposed their progress during the first two days; and as the drifting snow was as fine as sand, the sledges sank deeply into it and could scarcely be dragged along. Huge masses of ice, rising to a height of a hundred feet in some places, towered above them, and barred their progress.

Fighting against these conditions, both men and dogs soon suffered from the strain; and as the march was slow the provisions failed to hold out. "Just south of Cape de Fosse," says Peary, "we ate the last of our biscuits; just north of it the last of our beans. At Cape John Barrow a dog was killed for food." In this pitiable plight the three Americans and two Eskimos forced their way till only one more headland lay between them and Fort Conger. Groping their way in the darkness, they struggled on, frozen and half-famished, for eighteen hours till they reached the dilapidated building from which, fifteen years before, Greely and his party had begun the retreat which ended in a tragedy.

Arrived at the end of the journey, Peary became conscious of a peculiar feeling in his right

foot, and by the dim light of a flickering lamp, he found that both his feet were severely frost-bitten, being, in fact, frozen solid. For six weeks he lay helpless at Fort Conger, suffering agonies from the pain in his limbs. By the unremitting care of Surgeon Dedrick, who had accompanied the party, the limbs were saved, but no fewer than seven toes were hopelessly affected, and these could only be amputated on board the *Windward*, then lying 250 miles to the southward.

With the temperature between sixty and seventy degrees below zero, the journey back to the ship was begun, Peary being lashed to a sledge and covered with musk-ox skins. Though suffering intensely on the way, he did not complain. Fortunately the traveling was comparatively easy, and in ten days the *Windward* was reached. After the operation Peary made a wonderfully speedy recovery, and by the beginning of April he was again busy preparing for the advance northwards.

Another expedition, which began in July, 1905, and during which Peary made another record march towards the Pole, was full of adventures and narrow escapes. After the usual encounters with the ice on the northward voyage, his new vessel, the *Roosevelt*, reached Cape Sheridan, and went into winter quarters. There

the winter months passed pleasantly, but somewhat monotonously.

The return of spring was the signal for beginning active operations. On February 19, the earliest possible date, the first sledge party started off Polewards, other parties following a few days later. On the 28th, the various parties took their departure from Cape Hecla, and following in the rear, Peary hurried on with all possible speed, hopeful of reaching the Pole at last.

For some days the ice was in motion everywhere; but it gradually became quieter, and as there was very little wind the traveling was particularly good. Full of impatience as he tramped along, and grudging every moment given to rest, Peary dreaded lest he should meet with some obstacle, such as open water or impassable ice, that would put an end to the journey northwards.

Delayed by gales and open water, and driven out of his course seventy miles to the eastward, Peary was cut off from communication with his supporting parties; and finding that he could no longer depend upon them, he determined to make a dash for the Pole with the party, eight in all, and the supplies which he had with him.

Abandoning everything not absolutely essential, and bending every energy to set a record pace, they traveled thirty miles in ten hours' march. Storms of wind and snow added consid-

erably to the difficulties of the journey, the strain of which told severely on both men and dogs.

The 20th of April brought the weary travelers into a region of open leads, bearing north and south. Resting here for a few hours, Peary and his companions resumed their march at midnight, pushing on with feverish haste to lessen the distance between them and the goal that was luring them on. Traveling as fast as they could till noon of the next day, they came to a final halt.

Disappointed at having to stop before the object of all his striving had been reached, Peary would have liked to make the last dash with only one or two of his men; but he dared not do this in view of the condition of the ice, and reluctantly he had to confess that once again the prize had eluded his grasp. Making observations, he found that they were in $87^{\circ} 6'$ north latitude, the most northerly point that had yet been reached by man.

Warned by the haggard faces of his comrades and the skeleton figures of the few remaining dogs, Peary saw that no time must be lost in turning back. After hoisting a flag from the summit of the highest point of land, and leaving a bottle containing a record of the journey, the exhausted men turned their backs on the Pole, and began the weary march homeward.

Trying as the outward march had been, the

dangers of the return journey were even greater. Besides, there was no longer the excitement of possible victory to encourage the men in the face of hardships. Killing their dogs for food, and breaking up the sledges to provide fires for cooking, the tired and dispirited explorers pushed on till they found themselves stranded on an island of ice. Was this, then, to be the end of the enterprise, and were they to meet death in that cold and pitiless sea? Such a fate seemed inevitable. But just as they were preparing for the worst, two of the Eskimo scouts came hurrying back to the camp with the report that, a few miles farther on, the water was covered with a film of young ice, and that there was a possibility of their being able to cross on snow-shoes.

It was a desperate chance, but they at once prepared to take it; and carefully fixing on their snow-shoes, they made the venture, the lightest and most experienced Eskimo taking the lead, with the few remaining dogs attached to the long sledge following, "and the rest of the party abreast, in widely extended skirmish line, some distance behind the sledge." They crossed in silence, holding their breaths, the ice swaying beneath them as they skimmed along. What the result would be none could tell; but they all felt the greatness of their peril.

Peary himself confesses that this was the first

and only time in all his Arctic experience that he felt doubtful as to what would happen. "When near the middle of the lead," he says, "the toe of one of my snow-shoes, as I slid forward, broke through twice in succession; then I thought to myself, 'This is the finish.' A little later there was a cry from some one in the line, but I dared not take my eyes from the steady gliding of my snow-shoes. When we stepped upon the firm ice on the southern side of the lead, sighs of relief from the two men nearest me were distinctly audible. The cry I had heard had been from one of my men, whose toe, like mine, had broken through the ice." The crossing had been made just in time, for, as the travelers looked round for a moment before turning their faces southward, they saw that the sheet of ice on which they had crossed was in two pieces. The lead was widening again.

All were safely across; but they were not yet out of danger. Unable to find a route which they might traverse with any degree of safety, Peary and his men ascended a high mass of ice to have a better view of their surroundings, and to look for a way of escape. What they beheld from their elevated position might well have struck terror into the boldest heart. Before them extended such a mass of shattered ice as Peary had never seen before and hoped never to see

again, "a confused mass of fragments, some only the size of paving-stones, others as large as the dome of the Capitol at Washington, but all rounded by the terrific grinding they had received."

Once again death was looking them in the face, for it seemed an utter impossibility to find a path through that frozen wilderness. But as long as they could keep a footing they determined to struggle on; and stumbling forward at every step, bruised and sore, they at last struck a better road. They made their way to Britannia Island, and thence to Cape May and Cape Bryant.

The brave party suffered much from want of food. For days on end they were on the verge of starvation. A hare that was shot gave them the first full meal for nearly forty days. With snow falling around them, and without tent or covering of any kind, they lay down on the ground to sleep.

Waking in the morning as tired and hungry as ever, they found the tracks of musk-oxen in the snow, and their hopes rose as they endeavored to follow the trail. Sweeping the valley with their field-glass, they could see no sign of a living thing; but later on they espied several black dots at a distance, and knew that they had located the herd. Pushing on towards them,



THE BLACK AVALANCHE OF THUNDERING BEASTS WAS
BEARING DOWN ON THEIR ENEMIES

Peary and a companion lay down behind a big boulder to rest and gather strength, for they dared not risk a shot before they were sure of their aim.

Resolving at last on an attack, the two men grasped their rifles, and, rushing out from behind their place of shelter, made straight for the animals, now less than two hundred yards away. An old bull that was standing guard gave the signal to charge, and in a minute the "black avalanche of thundering beasts" was bearing down on their enemies.

Fortunately for Peary his shot went true, and the great bull fell dead. The maddened rush was stopped; and before the oxen could make their retreat over the ridge six of their number lay dead upon the frozen ground; and for the next few days the party revelled in the delights of a continuous feast.

Fortified by this food they pushed on till they reached their ship and safety. Again the final goal had eluded them—but soon the victory was to be theirs.

XVI

THE NORTH POLE CONQUERED

UNDAUNTED by the failure of his previous attempts through more than twenty long years, Peary prepared for still another try at the Pole. The popular interest in his expedition was widespread, beginning with President Roosevelt himself, for whom Peary's vessel was named. The funds for the venture were raised by popular subscription.

Meanwhile a small flood of "crank" letters poured in from all over the country. There was an incredibly large number of persons who were simply oozing with inventions and schemes, which if adopted would insure the discovery of the Pole. There were flying machines, submarines, motor cars, motor sledges, and balloons of all sorts. One chap, says Peary, proposed that "a central soup station" be installed, and that a series of hose lines be run thence over the ice so that outlying parties could be warmed and invigorated with hot soup from the central station.

"Perhaps the gem of the whole collection was furnished by an inventor who desired me to play the part of the 'human cannon ball.' He would not disclose the details of his invention, appar-



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THE ROOSEVELT, PEARY'S SHIP, UNDER STEAM, BLOWING A FAREWELL AT
ETAH

ently lest I should steal it, but it amounted to this: If I could get the machine up there, and could get it pointed in exactly the right direction, and could hold on long enough, it would shoot me to the Pole without fail. This was surely a man of one idea. He was so intent on getting me shot to the Pole that he seemed to be utterly careless of what happened to me in the process of landing there, or of how I should get back."

Peary adds: "It is a great satisfaction to me that this whole expedition, together with the ship, was American from start to finish. We did not purchase a Newfoundland or Norwegian sealer and fix it over for our purposes, as in the case of other expeditions. The *Roosevelt* was built of American timber in an American shipyard."

Leaving New York in July, 1908, Peary hoped to be back in the United States by October, 1909. This was his eighth voyage into the Arctic regions, and he meant it to be his last. The weary years of battle with snow and ice had robbed him of the vigor of youth, and he felt that he had reached an age when he must give up Arctic enterprise. He must win now, or lose forever, the glory for which he had so long toiled and struggled. So he laid his plans with a care that left nothing to chance.

During the rest of that summer and the early fall the gallant ship fought her way steadily northward. As the winter stretched forth its icy hands to meet them, they struggled through one ice floe after another. The ship had powerful, low-pressure engines, and in an emergency extra steam could be forced into the cylinders causing the craft fairly to leap ahead.

During the worst parts of the journey Captain Bartlett, who was in charge of the ship, spent most of his time in the crow's nest, the barrel lookout at the top of the mainmast. Peary would often climb up in the rigging just below him, and would hear the captain calling encouragingly to his ship as she fought the ice:

"Rip 'em, Teddy! Bite 'em in two! Go it! That's fine, my beauty! Now—again!"

Again Peary writes: "I think that none of the members of the expedition will ever forget the 30th of August. The *Roosevelt* was kicked about by the floes as if she had been a foot-ball. The game began about four o'clock in the morning. I was in my cabin trying to get a little sleep—with my clothes on, for I had not dared remove them for a week. My rest was cut short by a shock so violent that, before I realized that anything had happened, I found myself on deck—a deck that inclined to starboard some twelve or fifteen degrees. A big floe, rushing past with

the current, had picked up the grounded berg to which we were attached by the hawsers, as if that thousand-ton berg had been a toy, and dashed it against the *Roosevelt* and clear along her port side, smashing a big hole in the bulwarks at Marvin's room. The berg brought up against another one just aft of us, and the *Roosevelt* slipped from between the two like a greased pig."

By the first week in September they had reached the point previously picked out for winter quarters, Cape Sheridan, latitude 82° and the farthest north which any ship had reached under her own steam.

After wintering at Cape Sheridan, Peary's sledge expedition left the *Roosevelt* in February, 1909, and started north from Cape Columbia on March 1st. The party comprised seven members of the expedition, seventeen Eskimos, a hundred and thirty-three dogs, and nineteen sledges.

For several days they were held up by open water; but pushing on again, they made splendid progress. At various stages in the journey the supporting parties returned to the ship. The last to leave was that under the command of Captain Bartlett, which started on the home-trail after the 88th parallel had been reached.

Having said good-bye to Bartlett, Peary and

Hensen, five Eskimos, with supplies for forty days, with the sledges and equipment in the best of condition, and with the pick of the dogs, pushed on ahead, the commander sparing neither himself nor his companions in his eagerness.

Here and there the ice was irregular, but on the whole conditions were good, and no serious difficulties arose to bar their advance. Near the end of their long journey, however, they had to cross a strip of thin ice about a hundred yards wide. So thin was it that, says Peary, "As I ran ahead to guide the dogs, I was obliged to slide my feet and travel wide, bear style, in order to distribute my weight. The last two men came over on all fours. I watched them from the other side with my heart in my mouth—watched the ice bending under the weight of the sledges and men. As one of the sledges neared the north side, a runner cut clear through the ice, and I expected every moment that the whole thing, dogs and all, would go through the ice and down to the bottom. But it did not."

Such a disaster would have frustrated all their hopes and doubtless their lives as well. But at last the Pole grudgingly yielded up its secrets.

On April 4, the 89th parallel was passed; and two days later, Peary, Hensen and his Eskimos stood where no human foot had ever been before—at the Pole itself.

“East, west, and north had disappeared for us. Only one direction remained and that was south. Where we were, one day and one night constituted a year, a hundred such days and nights constituted a century.” The sun passed around them in an unending circle as it rose or dipped against the horizon.

For thirty hours the explorer and his party remained at this bleak, frozen extremity of the world, which did not differ in appearance from the icy surface over which they had traveled. During their stay Peary made observations, deposited records, and took photographs. Leaving again on the day following, they arrived at the *Roosevelt* on the 27th; and a few months later all the members of the party returned in safety to America, with the exception of Professor Ross G. Marvin, who had met his death by drowning.

The Pole had thus been conquered. The journey was accomplished without experiencing one serious interruption on the march, thanks to Peary's exceedingly careful planning.

There was only one risk against which there could be no guarantee of safety. He could not control the forces of Nature; and he had just to take his chance. At any moment the ice, which appeared as solid as granite, might break up with a crack and engulf the party traveling on its

surface. But for once Peary enjoyed good fortune.

On the homeward journey, as well as on the outward run, the pace was more rapid than they had even dared to hope; and the feelings of all were well expressed by one of the Eskimos, in his quaint way: "The devil is asleep or having trouble with his wife, or we should never have come back so easy."

From a scientific standpoint the soundings which Peary took in the neighborhood of the Pole are of much importance. At a short distance from the land, between 83° and 84° north latitude, he found a depth of 110 fathoms. At the 85th degree the water was much deeper, a sounding of 825 fathoms being obtained; while five miles from the Pole itself the depth was found to be 1500 fathoms, with no bottom. From these soundings it is argued that what is known as the Continental Shelf—that is, the shallow plateau extending over a varying distance from the edge of the coast-line—deepens rapidly in the Arctic Ocean.

One other sensational fact must be chronicled in connection with Peary's achievement. Five months after the date of discovery, the news of the great event was proclaimed to the world in a brief message despatched from Newfoundland. As it flashed across the wires of the

American continent and was cabled to the farthest corners of the earth, Peary knew that it would send a thrill into many a heart. But he was not then aware that just a week earlier the honor which he chronicled had been claimed by a fellow-countryman of his own!

The situation was an extraordinary one—two explorers within one week claiming to have accomplished the unrivalled feat of reaching the North Pole. It seemed as if fate had once more been unkind to Peary, and had robbed him of the honor for which he had so manfully striven; for, if the story of the other claimant, Dr. Frederick A. Cook, was to be believed, he had planted the flag of the United States at the Pole exactly a year before it had been reached by Peary.

Who was this Dr. Cook, and how was it that he had accomplished this remarkable feat without taking the public into his confidence and telling them what he intended to do? Nobody had heard of his expedition; very few knew anything of the man himself.

According to his own statements, Cook had long entertained the ambition to lead an expedition to the Pole; and it was while he was engaged in hunting in the northern latitudes that the opportunity came to him. On July 4, 1907, he left New York in a schooner belonging to Bradley, a wealthy gentleman devoted to the hunt-

200 NORTH POLE CONQUERED

ing of big game. Late in the same year the schooner arrived at the limit of navigation in Smith Sound, and the conditions seeming favorable, the "happy thought" occurred to Cook that he might make a dash northwards. They were then at a point 700 miles from the Pole. The problem was discussed with Bradley, who generously volunteered to land from the yacht food, fuel, and other necessary supplies. "The opportunity was too good to be lost," says Cook, "and we therefore returned to Etah to prepare for the new quest."

Starting with this plausible introduction, Cook proceeded to relate in detail the journey over a moving sea of ice, until he and his companions found themselves, "on April 21st, in latitude $89^{\circ} 59' 46''$. The Pole, therefore, was in sight. At last," continues Cook, "the flag had been raised to the coveted breezes of the North Pole. The latitude was 90° , where all meridians meet; the temperature was minus 36° . North, east, and west had vanished. It was south in every direction."

Naturally, the story was received with a good deal of doubt. Peary, full of wrath at the assertions of the pretender, declared that Cook had never been near the Pole, and that there was not a word of truth in his story. But for a time many people believed in him. He was fêted and

honored, declaring all the while that when his records came to be examined by experts his claim would be established.

By-and-by his evidence was produced; but it did not bear examination; and almost as suddenly as he had appeared before the gaze of the world, Cook disappeared from the scene, leaving Peary to the full enjoyment of his glory.

In marked contrast to the hesitation with which Cook's story had been received, the brief messages from Peary gave rise to no doubt whatever. Here was a man who had given the best years of his life to the solution of the mystery, and who, though baffled again and again, had refused to accept defeat. And now, when he announced that, after twenty-three years of effort, he had reached the goal, and produced his papers, his claim abundantly supported by proof was accepted without question.

XVII

THE LURE OF THE SOUTH POLE

IT is a long and a wonderfully thrilling story that is bound up with the history of Arctic exploration; the record of adventure in the regions of the South Pole is neither so long nor so rich in incident.

Not only has the South Pole failed to stir the public imagination to anything like the same extent as the North, but its history begins at a much later period. It is only within comparatively recent times that any attempt has been made to reach the southern extremity of the earth's axis. Voyages of discovery in the Arctic were encouraged by the prospect of opening up new routes for commerce; and in this way were established the prosperous seal and whale fisheries. The South, on the other hand, has held out no such inducements.

Before the days of Captain James Cook, who may be regarded as the pioneer of South Pole navigators, there was a widespread belief in the existence of a great Southern continent. A few attempts had been made to penetrate into the unknown region, but little knowledge was obtained regarding it.

In 1567 the governor of Peru despatched an expedition to explore the "Terra Australis Incognita;" and a second expedition from the same country, commanded by Queros, followed in 1605. After exploring in the southern Pacific, this navigator returned with a glowing story of the richness and beauty of the lands he had seen.

Other expeditions, one from Amsterdam in 1598, and another from France in 1675, sailed with the object of making discoveries; but it was not until the celebrated voyage of James Cook that the curtain began to be lifted.

Sailing the southern seas in the *Endeavour* in 1768, Captain Cook proved New Zealand to be an island. In 1772 he set sail with the *Resolution* and the *Adventure* on another expedition. "The importance of this voyage," says Captain R. F. Scott, the famous Antarctic explorer, "can scarcely be exaggerated. Once and for all the idea of a populous, fertile Southern continent was proved to be a myth; and it was clearly shown that whatever land might exist to the South must be a region of desolation, hidden beneath a mantle of ice and snow." Cook's Farthest South was $71^{\circ} 10'$, or 1130 geographical miles from the South Pole.

During the forty years immediately following Cook's last voyage the Antarctic seas were undisturbed by navigators; but the nineteenth cen-

tury was only in its infancy when there came a revival of interest, and it is since that time that we have got to know anything of what lies within the Antarctic Circle.

In 1819 an English sailor named William Smith discovered the South Shetlands; and, in the same year, Alexander I., Emperor of Russia, fired with the spirit of exploration, determined to send expeditions simultaneously to the North Polar and South Polar regions, and despatched two ships to each destination.

Under the command of Bellinghausen, the southern expedition, in the ships *Vostok* and *Mirni*, crossed the Antarctic Circle in 1820. Though they found their progress blocked by the ice-packs and did not proceed as far south as might have been expected, the enterprise was far from fruitless. Bellinghausen discovered and named Peter I. Island and Alexander I. Island, and returned to Cronstadt, in 1821.

During this voyage Bellinghausen found a fleet of American sealers in the neighborhood of the South Shetlands; and it was about this time that a brisk and profitable whale and sealing industry sprang up in these waters. While engaged in fishing, the commanders of the vessels made several discoveries of importance. These are chiefly associated with the names of Weddell, Biscoe, and Balleny. In 1823, Weddell,

penetrated three degrees farther south than Cook, reaching $74^{\circ} 15'$ in the sea which now bears his name, and brought back with him to England the first specimens of the Weddell seal ever landed in Europe. John Biscoe, in 1831, began a circumnavigation of the Antarctic regions, discovering Enderby Land, named after his employers, the Biscoe Islands, and Graham Land.

The voyage of John Balleny was marked by the first disaster in the history of southern exploration. Sailing, in 1838, with the schooner *Eliza Scott*, 154 tons, and the cutter *Sabrina*, 54 tons, Balleny reached the Antarctic Circle in the following January, and soon afterwards encountered heavy ice. Changing his course to the westward, he discovered Balleny Islands, a group of volcanic mountains, and a little later sighted Sabrina Land. Overtaken by a heavy gale, the two tiny vessels were tossed about at the mercy of wind and sea, and the *Sabrina* foundered with all on board.

In 1838, a French expedition, under Captain Dumont d'Urville, failed to reach the Antarctic Circle, but discovered Louis Philippe Land and Joinville Island.

In 1840, d'Urville, learning while at Hobart Town that expeditions were being sent out from Britain and America, determined to be in front

of his rivals. He made a sudden dash south in the hope of adding fresh honors to his country's flag and new lands to the map of the world.

He was to some extent successful. To a group of snow-covered mountains, some of which rose to a height of 1500 feet, he gave the name of Adelie Land; and after sailing for a whole day along a vertical cliff of ice rising 130 feet out of the water, d'Urville concluded that there must be land behind such a solid mass, and gave it the name of Clarie Coast.

Sailing on these waters at the same time was an American expedition commanded by Commodore Wilkes—an expedition which was unfortunate from the very beginning. Six vessels composed the squadron, which was intended “to explore the southern Antarctic to the southward of Powell's group, endeavoring to reach a high southern latitude, but taking care not to be obliged to pass a winter there.” It was also to “make an attempt to penetrate within the Antarctic region south of Van Diemen's Land.”

The expedition was as ill adapted for its task as any that ever set out. Its leader, who was aware of the drawbacks under which it sailed, and of the folly of attempting such service in vessels that were not adapted for ice-navigation, declared that it had been ordered to go, and go it should.

In the ice-encumbered seas the squadron had a rough experience. One of the tiny ships lost her rudder, and for three days lay at the mercy of the ice; and then, after being repaired as well as was possible under the circumstances, returned to Sydney.

South of the Antarctic Circle Wilkes sighted land, to which he gave the name of Wilkes Land.

In spite of the protests of his officers and the advice of his surgeons, the American navigator continued to push his way westwards. It was only when farther progress became impossible and the health of his crews was in a precarious condition, due to long exposure to the severity of the weather, that he reluctantly decided to return to Australia.

Britain also had a share of this period in Antarctic enterprise. Two powerful vessels, the *Erebus*, 370 tons, and the *Terror*, 340 tons, were fitted out, and placed under the command of Captain James Clark Ross, an experienced Arctic explorer. Leaving England in 1840, this expedition, well equipped for its task, with its able commander and enthusiastic crew, accomplished more than any other enterprise that had preceded it.

Early in January, 1841, Ross boldly steered his two vessels into the dreaded ice-pack. After plowing southwards through broken ice for five

days, he emerged into the open sea now known by his name. Sailing westwards, Ross discovered Victoria Land, and followed its mountainous coasts for 500 miles to the south, where they terminated in Mounts Erebus and Terror, "the former of which was vomiting forth flame and lava from a height of 12,000 feet."

He then sailed for 300 miles to the eastward along the perpendicular face of an ice-barrier which rose from 150 feet to 200 feet above sea-level. He landed on two volcanic islands devoid of vegetation, and sailed within 160 miles of the South Magnetic Pole. He sounded and dredged in deep water; he studied the temperature of the ocean, and with the assistance of Joseph Hooker, he investigated the marine animal and plant life of the Antarctic; and he described in a vivid manner the anxieties, dangers, sufferings, and joys which he experienced during his three years in those realms of snow and ice and volcanic fire, where hailstorms, fogs, and gales alternate with brilliant sunshine.

After this busy period of enterprise, there followed a lull in Antarctic effort, the Arctic regions receiving more attention, chiefly in consequence of the tragic fate of Sir John Franklin and the numerous parties which went in search of the missing explorers. But after an interval of forty years there came an awakening of in-

terest, and the expedition of H.M.S. *Challenger* (1873-76), commanded by Captain George Nares, was fitted out. Although resulting in no new discoveries, the expedition accomplished much scientific work, its meteorological observations and deep-sea soundings being of the most valuable character. To the *Challenger* belongs the distinction of being the first steamship to cross the Antarctic Circle.

In 1898, an expedition in the *Southern Cross*, commanded by Carstens Borchgrevink, a young Norwegian, was fitted out by Sir George Newnes. Anchoring in Robertson Bay, off Cape Adare, Borchgrevink and nine companions landed with huts, stores, sledges, and dogs. They were the first party to pass a winter on the Antarctic continent. They explored the eastern coast of Victoria Land, as far south as Mount Terror; and the Great Ice Barrier was followed for about 300 miles eastward.

The Belgian Expedition in the *Belgica*, under Captain de Gerlache, in 1898, experienced many dangers and difficulties; but, in spite of all these, it was able to show a record of useful work. Soon after crossing the Antarctic Circle the tiny ship—250 tons only—encountered a severe gale, and was run into the ice-pack for shelter. Taking advantage of the wide lanes that had been opened up by the wind, De Gerlache pushed steadily

southwards, hoping to outdistance all previous explorers.

Accompanying the expedition as surgeon was Dr. Frederick A. Cook, of America, who some years later claimed to have reached the North Pole. He gives a vivid picture of their experiences in the ice. He writes: "It is a cold and gloomy region, with constant drizzly fogs. Clear weather is a rare exception. Storm, with rain, sleet, and snow, is the normal weather condition throughout the year.

"On the 28th we were unable to get a glimpse of the sun, and were, in consequence, in doubt as to our actual position. In the darkness the *Belgica* pushed into the ice-pack. The noise was maddening. Every swell that broke against the ship brought with it tons of ice, which were thrown against her sides with a thundering crash. The wind howled as it rushed past us, and came with a force that made us grasp the rails to keep from being thrown into the churning sea. Occasionally we would try to talk, but the deafening noise of the storm, the squeaking strains of the ship, and the thumping of the ice made every effort at speech inaudible.

"With our minds raised to a fever-heat of excitement, and with a prospect of striking an iceberg at any moment and going to the bottom of the sea, we were, to say the least, uncomfortable.

When we had entered sufficiently into the body of the ice-pack, and were surrounded by closely packed ice-floes, the sea subsided, and here the ship rested for the night."

For a whole year the *Belgica* remained fast in the ice, escaping at last from her prison in March, 1899, after all the members of the expedition had suffered greatly from insufficient food.

As navigators became bolder, and penetrated farther into the unknown South, they experienced some of the difficulties and hardships that had for so long been the lot of the Arctic explorers.

Under the leadership of Dr. Otto Nordenskiöld, a nephew of Baron Nordenskiöld, the famous Arctic explorer, a Swedish expedition arrived at the South Shetlands in January, 1902. For two years the explorers wintered in a timber house on Snow Hill Island in $64^{\circ} 25'$ south. Crushed in the ice, their vessel, the *Antarctic*, sank; but fortunately there was no loss of life, Nordenskiöld and his crew being rescued by an Argentine gunboat before the relief-boat which had been despatched from Sweden reached them.

A German expedition commanded by Captain Drygalski, in the *Gauss*, discovered Kaiser William II. Land, off which, in 1902, the vessel

went into winter quarters, and returned home in the following year.

Such were the beginnings of Antarctic enterprise.



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ICE PRESSURE IN THE WEDDELL SEA

XVIII

THE VOYAGE OF THE "SCOTIA"

TO the names of Weddell and Ross, famous Scotsmen who have been previously mentioned as explorers of the South Polar regions, must be added that of another Scotsman, Dr. W. S. Bruce, whose work in the Antarctic regions is worthy of high honor.

The public record of Dr. Bruce begins with his voyage to the Antarctic in 1892, when he sailed as naturalist on board the *Balaena*, one of a fleet of four Dundee whalers which had set out for the Weddell Sea. The main object of the expedition was to search for the Bowhead, or some similar whale, which was reported to exist there.

Many years earlier, Ross had seen in Erebus and Terror Gulf "great numbers of the largest-sized black whales lying upon the water in all directions," astonishing him and his men by "their enormous breadth." They had also seen a species of whale "greatly resembling, but said to be distinct from, the Greenland whale." It was on the strength of these and similar statements that this fleet of vessels was despatched to the Antarctic seas. Fitted up with nautical

and meteorological instruments, the *Balaena* was also equipped for scientific work.

The usual weather in these regions was encountered—fog, sleet, rain, and squalls. Many icebergs were met with, some of which were three or four miles long, and one, a floating island of ice, was thirty miles long. Surface and deep-sea temperatures were recorded. Soundings were made, and floats were thrown out to test the direction and the speed of surface-currents.

In the frozen waters, where flat-topped icebergs surrounded them on every side, they experienced a gale which the skipper of the *Balaena* described as the "hardest that ever blew in the Arctic or Antarctic." It was so stiff that for ten hours they steamed against it as hard as they could, and at the end had made only one knot. Any land that was seen was entirely covered with snow. The voyage, while valuable from a scientific point of view, did not succeed in its main purpose; for though many whales were seen, they were not worth catching.

In 1896, Dr. Bruce accompanied the Jackson-Harmsworth Expedition to Franz Josef Land, acting in the capacity of zoölogist. In 1898, he again sailed north; and later he joined the *Princess Alice*, the Prince of Monaco's yacht, for scientific work in Spitzbergen.

At last the national expedition to the Ant-

arctic for which Dr. Bruce had so long pleaded was rendered possible by the assistance of friends interested in the enterprise; and, without Government aid of any kind, the *Scotia* was fitted out. She left the Clyde in November, 1902, and by the end of the following January was well advanced in the southern waters. Exploring in her first season 4000 miles of ocean, the *Scotia* wintered at the South Orkneys, where, on the beach at Laurie Island, an observatory was built; and during the winter months much valuable investigation into the conditions of the Antarctic Ocean was carried on.

In November the *Scotia* was able to put to sea, the ice having yielded and left a passage. After calling at the Falkland Islands, she passed on to Buenos Ayres, where some necessary repairs were executed. Here the welcome news was received from Scotland that, as further funds were available, the voyage might be prolonged. Plans were accordingly made for another visit to the south; and before sailing from South America, Bruce had the gratification of learning that the Argentine Government had agreed to take over, as a permanent meteorological station, the building which he had erected on the South Orkneys.

After a call at the South Orkneys, where a party of six had been left to continue the mete-

orological observations during the *Scotia's* absence, Bruce made another dash South. On March 1st, as told in the *Voyage of the Scotia*, they crossed their "track of the previous year, running into clear water, where a year before there had been impenetrable ice." Land was sighted on the following day, and "steaming towards this, we found it to be a lofty Ice-Barrier, similar to the one discovered by Ross on the other side of the Pole.

"The Barrier stretched in a north-easterly and south-westerly direction; but heavy pack-ice prevented a nearer approach than two miles. The surface of the great inland ice, of which the Barrier was the sea-front, seemed to rise up very gradually in undulating slopes, and fade away in height and distance into the sky. In one place there appeared to be the outline of distant hills; if so, they were entirely ice-covered, no naked rock being visible." In the certain belief that they had discovered a new Antarctic land, Bruce gave to it the name of Coats's Land, in honor of his two principal supporters.

The farthest south reached was latitude $74^{\circ} 1'$, and, in 1904, the *Scotia* returned home. When they arrived in the Clyde in July, a great welcome was given to Bruce and his comrades. Among others King Edward offered his congratulations "on the completion of the important

additions to the scientific knowledge and discoveries in the south-eastern part of the Weddell Sea."

The discoveries made were of great value, and museums were enriched by the unique collections which Bruce brought back with him. He added to our knowledge in so many departments of science that it would require an expert in each department to describe his achievements. It may be said that no more enduring work than his has been accomplished in the Antarctic seas.

XIX

CAPTAIN SCOTT'S EXPEDITION IN THE "DISCOVERY"

ABOUT this time another British expedition to the Antarctic was organized. A specially designed ship, possessing unusual strength in her bows, was built at Dundee, and named the *Discovery*—the sixth of that name associated with Polar enterprise. The command was given to Captain R. F. Scott, an officer in the navy, with no experience of either Arctic or Antarctic exploration, but with a marked capacity for leadership and for any enterprise demanding the qualities of courage and endurance.

An uneventful voyage was made to New Zealand, and after remaining there for a month the *Discovery* proceeded south, crossing the Antarctic Circle on January 3rd, 1902. Forcing her way through the floes, the *Discovery* had every opportunity of displaying her splendid qualities, the resistance of the frozen masses testing the strength of her bows, and giving the voyagers a foretaste of the difficulties which lay ahead.

"The lofty peaks of northern Victoria Land,"



*From the photogravure portrait published by Messrs. Maull & Fox,
187 Piccadilly, London, W.*

CAPTAIN R. F. SCOTT, R.N.

says Captain Scott, "were succeeded by a comparatively low mountainous country, behind which a vast ice-cap appeared to rise to greater heights. Towards the 78th parallel, the flanking ranges of the continent again rose to great altitudes. In all this we had been aided by the most astonishingly good weather, instead of the gales, thick weather, and snowstorms we had expected."

Steaming along the face of the gigantic Barrier, which sixty years earlier had brought the voyage of Ross to an abrupt end, Scott found the voyage far from monotonous, something interesting showing itself every few hours. Less pack-ice was encountered than was met with by Ross, and the *Discovery* had penetrated almost to 150° west longitude before the heavy ice barred farther progress.

In longitude 165° the Barrier was seen to trend to the north. There a land of glaciers was seen, its higher summits rising to between 2000 and 3000 feet above the sea. It was named by the expedition King Edward VII. Land.

In 164° west longitude the *Discovery* was brought to a standstill alongside a low part of the Barrier; and there preparations were made for the ascent of a captive balloon, in order that an extended view of the surrounding region might be obtained. To Captain Scott fell the

honor of being the first to make a balloon ascent in the Antarctic regions. Though the experiment yielded no practical addition to their knowledge, it afforded a better view of the ice-fields round about, than was possible from the frozen tableland on which they stood.

Returning to McMurdo Bay, Scott made the interesting discovery that Mounts Erebus and Terror are on an island. He was able also to prove that McMurdo Bay, instead of being a bay, as was supposed, was really the opening of a strait leading southward between Ross Island (the name given by the expedition to the island from which Erebus and Terror rise) and the mainland.

Selecting their winter quarters on the extreme south of Ross Island, 400 miles farther south than any party had ever wintered before, the expedition erected several huts to serve as stations for magnetic and other observations.

According to the original intention, the *Discovery* was not to winter in the ice, but to return north after landing a small party. But a spot having been discovered in which the vessel could winter with safety, Scott decided that she should remain. Thus the entire party were kept together, and passed the time pleasantly, work and entertainment being agreeably blended.

Before the winter set in, several sledge parties ..

were despatched in various directions. These brought back with them a store of information that proved of great service when the journey toward the Pole began, some months later.

One of these parties, climbing a volcanic peak rising to a height of 2700 feet, saw the great snow-plain of the Barrier stretching apparently without limit from east and south-east to south, and "curling a long white arm around the island on which they stood." To the west "the same level of snow seemed to run deep into the fretted coast-line; and again they could see it beyond the high cape which limited the view from the ship;" while in the dim distance, south of the lofty western ranges, "more snow-covered peaks appeared."

With one of these early excursions over the ice a story of disaster is associated. On March 4, a sledge party, divided into two teams, each pulling a single sledge and each assisted by four dogs, left the ship. It consisted of four officers—Royds, Koettlitz, Skelton, and Barne—and eight men. For the first few days progress was exceedingly slow, the snow being soft and the pulling, in consequence, heavy. It soon became evident that the only chance of making progress was to use snow-shoes. As there were only three pairs of ski with the party, Royds decided to push on towards Cape Crozier, taking with him

only two brother-officers, and sending the other members of the party back to the ship. They separated on the 9th.

The returning party soon made the unpleasant discovery that, if the advance journey had been difficult, it was no easier task to find their way back. Overtaken by heavy gales of wind, they suffered much from the bitter blasts; and, being unaccustomed to these Antarctic conditions, they doubtless imagined their position more dangerous than it really was.

Discussing the situation among themselves, they decided to abandon their sledges and push on unhampered. Before leaving these, Barne impressed upon the men, as strongly as he could, the importance of keeping together, as it was impossible to distinguish any object at a greater distance than ten yards on account of the falling snow. Two of the men were wearing fur boots, and to prevent them from slipping they had a companion on each side. Crossing a steep slope where it was difficult to obtain a foothold, soon after they had left the sledges behind them in the snow, one of the men, named Hare, who was at the rear of the party, was reported to be missing.

In the violent squall which was then raging, it was almost impossible for the men to see one another; but an effort was made to find their

absent companion, even though at the risk of their own lives. Forming themselves into a human chain, they shouted and blew whistles; and while these efforts were being made to attract the attention of Hare, another of the men, Evans, disappeared just as suddenly and mysteriously as the other. He had stepped back on to a smooth piece of ice, and the next moment he had fallen and was out of sight.

The situation was becoming worse instead of better. Alone on the terrible mountain of snow and ice, their ranks reduced by these sudden disappearances, the little party were in a sad plight. What was to be done? It was a moment for prompt action, and Barne immediately resolved upon a plan.

Believing that the slope down which Evans had vanished was a short one, the officer cautioned his men to remain where they were, while he himself deliberately followed in the track of the missing man. It was not long before he discovered that he had made a serious mistake. The slope, instead of terminating as he had expected, increased in steepness; and almost before he had realized what was happening, he was sliding at a tremendous pace down the face of the bare and slippery ice. The mad rush ended at last in a bed of soft snow; and rising up to examine his surroundings, Barne was as-

tonished to find Evans unharmed within a few feet of him.

They were just congratulating each other on their marvelous escape, when another figure shot quickly through the gloom, coming to rest at their feet. This was Quartley, who, following Barne's example, had slipped over the edge of the slope to discover the cause of his absence, and had descended in the same swift, dangerous manner.

It was utterly useless to think of attempting to return to their companions by the way they had descended; and it was only when they looked around for some other path that they discovered how narrow had been their escape from a terrible death. Only a few paces from the spot at which their flight had ended they found that the slope stopped suddenly at the edge of a steep precipice, "beyond which they could see nothing but the clouds of whirling snow." As they stood recoiling "from this new danger, on the patch of soft snow which had saved them from it, a yelping dog flew past them, clawing madly at the icy slope, and disappeared forever into the gloom."

Bewildered by the awful dangers hedging them round, the three men stood huddled together; and it was only when the biting blasts had chilled them to the bone that they realized

the necessity of action, if they were to avoid freezing to death. Scarcely conscious of their movements in the whirling storm, they slowly made their way to the right along the cliff, and gradually came in sight of the sea lying far below. Then they worked their way up the face of a cliff, and crouching under some over-hanging rocks, found a temporary shelter from the violence of the gale.

While these three had been doing battle for their lives, the situation of the other members of the party left standing at the head of the slope was scarcely less perilous. Unconscious of the fate of their companions, and unable to penetrate the gloom that enveloped them, they could only stand and wait, shouting with all their might whenever a lull in the storm gave a chance of their voices being heard. No response coming to their repeated calls, and their leader failing to return, they realized that, as they could do nothing to render aid, they must think of saving themselves.

Striking out in the direction which they supposed led to the ship, the six men walked slowly along in single file, one called Wild leading. In this manner they proceeded along a slippery slope till they reached a valley. Seeing a precipice beneath his feet, the leader came to a sudden halt on the very edge of the cliff, springing

back with a cry of warning. Checking themselves just in time, his companions dug their heels into the slippery surface and came to a halt, all except a man named Vince, who was wearing fur boots and could obtain no grip on the ice. In a flash he was over the face of the precipice, and out of sight and reach of the others.

Saddened by this calamity, the men turned away to renew their desperate struggle for life. Beginning to ascend a steep slope, which seemed to offer the only path to safety, they toiled painfully up the treacherous rock, where one slip would have meant certain death. How they made their way to the top they could not tell; but at last the terrible nightmare was over, and once more they stood on safe ground. Their troubles were not yet at an end, but the worst was past; and they eventually reached the ship in an exhausted condition, exactly a week after they had left her with their comrades who had left them so mysteriously.

Laboring under strong excitement, the men gave an account of what had happened. A search-party was immediately despatched under the leadership of Armitage; and as there was just the possibility that Vince, in falling over the cliff, might have landed on some projecting fragment of sea-ice, a whaling-boat, with Lieu-

tenant Shackleton and ten men, set off to search the coast.

Barne, Evans, and Quartley were brought safely back; but no trace of Hare or Vince could be found; and although another party went out to continue the search, it met with no better success.

On the following day an extraordinary thing happened. A solitary figure was seen slowly approaching the ship, and this turned out to be Hare. When he had recovered from his exhaustion, he told his story. Finding that he could not walk in his fur boots with any degree of safety, he determined to return to the sledges and change into leather boots. Shouting this intention to his companions in front, he believed that they had heard and understood.

In the blinding storm he lost his way. Sitting down for shelter under some rocks he fell asleep, and on awaking found himself covered with snow. Recognizing Crater Hill, he was able to find his way back to the ship. He was none the worse for his long exposure of thirty-six hours, though it was difficult to persuade him that he had slept so long. He was under the impression that he had returned to the *Discovery* the day after parting from his companions.

With the return of spring, the preparations for the great work of exploration that lay ahead

were rapidly pushed forward. By means of sledging, vast tracts of the Arctic ice-fields had been covered. Now, for the first time in the history of Antarctic exploration, the same method of travel was about to be adopted on an extensive scale. Scott, in undertaking the task and adapting himself to the circumstances of the Southern regions, revealed striking qualities of resource. No detail was overlooked; the preparations were of the most careful and complete character; and before the exploring party left the ship, a depot towards the south had been established on the ice.

The great march into the unknown began in November; Scott, Shackleton, and Wilson starting off with four sledges and nineteen dogs. It was a difficult and hazardous journey. Much of the ground had to be covered three times, the loads, until they were lightened by the establishment of a depot to meet the needs of the return journey, being too heavy to drag over the surface of the soft snow. The party was delayed, too, by heavy snow-storms and trouble with the dogs, all of which gradually weakened and died. In spite of hardships, however, the party pushed steadily southwards.

Throughout the long and trying march Scott maintained his buoyant cheerfulness, making light of the difficulties and facing the dangers

with a stout heart. Within a fortnight after leaving the ship they were nearly up to the 79th parallel, and therefore farther south than any one had been before. "We are already beyond the utmost limit to which man has been," we find Scott writing in his diary, not without some pride and satisfaction natural in the circumstances; "each footstep will be a fresh conquest of the great unknown."

Towards the end of the month we find this entry in the diary: "Before starting to-day (25th November) I took a meridian altitude, and to my delight found the latitude to be $80^{\circ} 1'$. All our charts of the Antarctic regions show a plain white circle beyond the 80th parallel. It has been our ambition to get inside that white space, and now we are there the space can no longer be a blank; this compensates for a lot of trouble."

On December 2, Scott notices "the cracking of the snow crust; sometimes the whole team with the sledges get on an area that cracks as sharply and as loudly as a pistol-shot, and this is followed by a long-drawn sigh as the area sinks. When this has happened the terrified dogs sprang forward with their tails between their legs, and heads screwed round as though the threatened danger was behind. Indeed, it gave me rather a shock the first time—it was so unexpected, and the sharp report was followed

by a distinct subsidence. Though probably one dropped only an inch or two, there was a feeling of insecurity which was not pleasant."

To the right of the travelers, as they doggedly pushed to the south, new land appeared in sight at a distance of about fifty miles. So far as they were able to judge, this consisted of a magnificent range of mountains, some of them rising to a height of over 10,000 feet. They saw no trace of volcanoes.

By the beginning of December the struggle had become considerably harder. Several of the dogs were practically useless, and the others were working only with a great effort. Unless the explorers pulled hard themselves they could make no progress; and it was with difficulty that they made even four miles a day. One day they covered only two miles.

By December 30, the little party had reached latitude $82^{\circ} 17'$ south, and there they were compelled, by failing provisions, to stop. They were unable to reach the land owing to a great chasm in the ice; but they had already performed a wonderful feat, having surpassed all Antarctic records, and penetrated to within 463 miles of the Pole. To the highest peaks in the great range of mountains, trending south-eastward in the distance, names were given. One was called Mount Markham and another Mount Long-

staff, the former, about 15,000 feet, being the highest of the group.

The exploring party reached the *Discovery* on February 3, having plodded for ninety-three days, as Scott has put on record, "with ever-varying fortune, over a vast snow-field, and slept beneath the fluttering canvas of a tent. During that time we had covered 960 miles. If we had not achieved such great results as at one time we had hoped for, we knew at least that we had striven and endured with all our might."

During the absence of the sledging party, the members of the expedition who had been left on the ship had not been idle. Parties had been at work in various directions exploring the neighborhood, thus adding to their knowledge of their surroundings.

Led by Armitage, a party had climbed the great Ferrar Glacier which descended from the western mountains; and owing to the treacherous nature of the snow-slopes over which they were traveling, Armitage nearly lost his life.

Describing the incident later, Armitage said that while crossing the smooth ice he suddenly became conscious that he was taking a dive; then he felt a violent blow on his right thigh, and all the breath seemed to be shaken out of his body. Instinctively he thrust out his elbows and knees, and then saw that he was some way

down a crevasse, which seemed to be about four feet wide at that point, and broader to right and left; below it widened into a huge, fathomless cavern. Skelton threw down to him the end of an Alpine rope with a bowline in it. Slipping this over his shoulders, Armitage was hauled up with a series of jerks and landed on the surface, feeling, as he said, as though he had been cut in two, and with not a gasp left in him.

The arrival of the relief-ship, *Morning*, was heartily welcomed by the expedition; and when she sailed for home several members of the *Discovery's* crew returned with her. Shackleton, whose health had given way under the exposure of the great sledge journey, but who had persisted in sticking to his post, was an unwilling passenger.

For another winter the *Discovery* was firmly locked in the ice. The time passed happily and uneventfully, and on August 21, Scott was able to write: "Our second long Polar night has come to an end. I do not think there is a soul on board the *Discovery* who would say that it has been a hardship. All disappointment at our enforced detention has passed away, and has been replaced by a steady feeling of hopefulness." Throughout the season scientific observations were carried out, and many new and interesting facts were discovered.

Sledging operations began with the return of spring, the most important of the journeys being that led by Scott into the western mountains. An advance-party, which went out to find a new route to the Ferrar Glacier, placed on it a depot in readiness for the greater expedition over the ice-cap.

Scott started out in September with four sledges; but a week later, when a height of over 6000 feet had been reached, the sledges broke down owing to the runners giving way, and the party reluctantly returned to the ship. On the 26th they made a fresh start. The "wretched runners," as Scott described them, again caused trouble; but while these difficulties were "very annoying," Scott was determined to push on, even if they had to carry their loads. More than one blizzard was encountered as they ascended the icy slope of the glacier, the worst attacking them when they were about half-way up the slope. Almost at a run, they hurried to the top in the hope of finding a suitable camping-ground.

Already most of the party were frost-bitten in the face, and it was evident that unless a shelter was speedily found it would fare badly with them all. "I shall not in a hurry forget the next hour," Scott tells us. "We went from side to side, searching vainly for a patch of snow, but everywhere finding nothing but the bare,

blue ice. The runners of the sledges had split again so badly that we could barely pull them over the rough surface; we dared not leave them in the thick drift, and every minute our frost-bites were increasing. At last we saw a white patch, and made a rush for it. It proved to be snow indeed, but so ancient and wind-swept that it was almost as hard as the solid ice itself. Nevertheless, we knew that it was this or nothing; and in a minute our tents and shovels were hauled off the sledges, and we were digging for dear life."

It was no easy task erecting tents on such a thin patch of snow and in such a storm as was then blowing; but after the canvas had been several times blown down, the work was accomplished and the slender coverings stood upright. Into them the tired men crept, glad to find some shelter from the raging storm. They did not, however, bargain for such a long stay as that to which they were doomed.

For a full week the explorers were confined to their tents; and Scott confesses that it was the most miserable week he ever spent. Almost without a lull the gale continued to rage with extraordinary fierceness; and for twenty-two hours out of each twenty-four the men lay in their sleeping-bags, enveloped continuously in a thick mist of driving snow.

Tired of their long and weary imprisonment, Scott and his companions resumed their march, though they could scarcely see half-a-dozen yards in front of them. They felt, however, that anything was better than inaction, and preferred to risk the chasms and crevasses that threatened them at every step rather than remain imprisoned in their tents.

It was heavy work trudging slowly over the ice, exposed all the time to the stinging fury of the wind; and it told so severely on several members of the party that they were compelled to return to the vessel. "We all have deep cracks in our nostrils and cheeks," Scott wrote in his diary, "and our lips are broken and raw; our fingers also are getting into a shocking state."

By November 30, they had finished their last outward march. "Thank Heaven!" is the entry in the leader's record; and he goes on to add: "Nothing has kept us going during the past week but the determination to carry out our original intention of going to the end of the month. Here, then, tonight we have reached the end of our tether, and all we have done is to show the immensity of this vast plain.

"The scene about us is the same as we have seen for many a day, and shall see for many a day to come—a scene so wildly and awfully desolate that it cannot fail to impress one with

gloomy thoughts. We see only a few miles of ruffled snow bounded by a vague, wavy horizon; and we know that beyond that horizon are hundreds, and even thousands, of miles which can offer no change to the weary eye. On this vast expanse we know that there is neither tree nor shrub, nor any living thing, nor even inanimate rock—nothing but a terrible, limitless expanse of snow. It has been so for countless years, and it will be so for countless more. And we, little human insects, have started to crawl over this awful desert, and are now bent on crawling back again.”

Little wonder that these brave men were glad to turn their faces once more towards the ship, determined to reach her with all speed. By pluck and endurance they had dragged their sledges a distance of 278 miles from the ship, over a surface of frozen snow 9000 feet above sea-level; and on December 1, they started to retrace their steps.

The wind was now behind the travelers, but new difficulties arose on the march. Slipping and falling, and plunging blindly into yawning chasms, they gradually reduced the distance that lay between them and the comfort and safety of their vessel, which they reached at last on Christmas Eve.

The relief-ships, the *Morning* and the *Terra*.

Nova, reached the expedition a few days later, and on February 19, 1904, the *Discovery* escaped from the harbor, where for two years she had been locked in the ice. The expedition was thus practically at an end; and Scott made his way back to New Zealand.

XX

SHACKLETON'S FARTHEST SOUTH

BY demonstrating the practicability of long sledge journeys within the Antarctic Circle, Scott had opened up a new field of possibilities; and it was inevitable that before many years had elapsed another attack, strengthened by Scott's experiences, would be made on the frozen route to the South Pole.

The man to make the attempt was Lieutenant Ernest Shackleton, afterwards knighted in recognition of his work of exploration. Serving under Scott in the *Discovery* enterprise, he had accompanied his leader on the famous sledge journey that had broken all previous records. He had thus gained a thorough knowledge of the conditions of the desolate wastes lying between civilization and the extremity of the Frigid South; and by actual acquaintance with the dangers of traveling over the frozen surface, he knew what to expect.

An expedition under Shackleton's command was organized, and after being visited by King Edward and Queen Alexandra, the *Nimrod* sailed from England in August, 1907. In its trying experiences and numerous adventures



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SIR ERNEST SHACKLETON

this expedition bore a closer resemblance to Arctic explorations than any of its predecessors. The hardships of ice-travel, the fatigues of long marches, the daily nearness of death in the dangers that surrounded them, the battles with the pitiless blizzards, the sufferings caused by hunger—these are all familiar features in the long story of Arctic enterprise.

Shackleton was thwarted in his ambition to reach the Pole; but he failed not from any lack of courage or effort, but simply because it would have been madness to go on. The food was practically gone, and the nearest depot lay miles away. Had Shackleton and his companions not been prudent as well as brave they might have reached the Pole, but it is certain they would never have come back to tell the tale.

Leaving England for its voyage into the Antarctic regions, the expedition under Shackleton had before it every prospect of success. Its chances of getting close to the Pole were certainly brighter than those of the *Discovery*. As we have already seen, Scott had no experience of Polar exploration, and in consequence much of his work was experimental. Shackleton, having been a member of Scott's party, had profited by its experiences. He was, therefore, able to start out with everything in his favor.

In its equipment the expedition differed but

little from its predecessor. It made a new departure, however, in using Manchurian ponies and a motor-car, though neither experiment met with the success anticipated.

After calling at New Zealand, according to the usual custom of southern voyagers, the *Nimrod* left Lyttleton on January 1, 1908, and had not proceeded very far before she met with severe weather. Knocked about by wind and sea, the little vessel began to leak badly, necessitating anxious work at the pumps for some considerable time. Passing into clearer weather, the expedition was soon among the floating masses of ice, and entering Ross Sea, proceeded along the edge of the Great Ice-Barrier.

When they reached McMurdo Sound, winter quarters were selected at a spot only twenty miles from the bay in which the *Discovery* had passed a couple of winters. With as little delay as possible the necessary stores and equipment were transferred to the land, in order that the *Nimrod* might be able to return north before the season was too far advanced. The work was accomplished in good time, in spite of blizzards and other drawbacks; and on February 22, the ship steamed away, leaving the exploring party to pass the long night on the lonely coast, and to prepare for the task awaiting them

when the brightening days should finally come to their aid.

Shackleton and his men found the time pass pleasantly enough, for there was a variety of occupations to engage their attention. One party, for example, climbed the long and slippery slopes of Mount Erebus, being the first men to reach its summit. Having accomplished the object of their climb, they descended 5000 feet in the remarkably short space of four hours by sliding down the snowy surface.

The coming of spring witnessed a period of much activity. The great event towards which all the preparations led up was the hazardous journey to the Pole. But before this expedition into the depths of the frozen wilderness was begun, it was necessary to make preliminary trial trips; provisions had to be laid along the ice-bound route; and the ponies and dogs needed training in the work required of them.

At last everything was ready. On October 28, the southern party, consisting of Shackleton, Dr. Marshall, Adams and Wild, with provisions for ninety-one days, and accompanied by a supporting party carrying provisions for fourteen days, turned their backs on the winter quarters at Cape Royds, and began their long journey over the blizzard-swept desert.

Brilliant sunshine and a cloudless sky smiled

upon the southward-bound travelers as they said good-bye to their companions. But it was not long before trials in one form or another came to test the mettle of which they were made. One of the ponies became lame; and this caused some delay at Hut Point, where the first camp was made.

When they left Hut Point, the prospects seemed brighter, the weather remaining fine, and the ponies pulling with vigor. But two days after leaving the camp a gusty wind, from which those regions are never entirely free, bore down upon the little party with such violence as to compel them to halt. The blizzard continuing to make traveling impossible, Shackleton and his companions had to content themselves with a couple of biscuits each for lunch, in order that the delay might not make an inroad upon their food-supply, which, with careful management, might last a hundred and ten days.

When the journey was resumed other dangers were encountered, not the least of these being the dangerous character of the great plain over which they were making their way. Covered with snow, the plain was apparently level and comparatively easy to traverse; but closer acquaintance with it revealed the terrifying fact that underneath the innocent-looking surface of snow lay numerous crevasses. To avoid these,

unceasing watchfulness had to be exercised. Once or twice the escapes from death were nothing short of marvelous. One of the ponies led by Adams suddenly disappeared up to its middle in one of these concealed traps, and it was only after considerable difficulty and danger to the others, that man and pony were rescued from certain death.

Depot A was reached on November 15. Taking part of the stores awaiting them there, the travelers resumed their way southwards. One day was very much like another as they trudged over the frozen waste. Leaving their sleeping-bags soon after five in the morning, they had to prepare breakfast and make preparations for the day's journey, so that it was nearly eight o'clock before they were able to get on the march.

Much of the traveling had to be done in single file, each man taking his turn at leading, and thus forming a kind of path for his fellows. Camp was usually pitched about six. Then, sitting down to the evening meal round the stove inside the tent, the four explorers enjoyed the rest which they had so well earned.

Reaching Depot B, in latitude 81° , they left some provisions for the homeward journey, and killed one of the ponies, as fresh meat was required for the depot and to carry with them.

In addition, the food-supply of the animals was becoming seriously reduced in quantity.

Marking the spot at which the stores had been left, they made a new start to the southward, the three ponies now doing the work of four, and pulling splendidly over the gradually improving surface. Soon after they left the depot, new land appeared to the south—a range of ice-covered mountains, upon which the eye of man had never before dwelt. Something like awe possessed the travelers as these snow-clad heights rose, white and majestic, in the distance. The pleasure of the discovery was, however, lessened by the fear that, as the trend of the mountains was to the south-east, there was the possibility of their blocking the passage to the south, and thus forcing the travelers to find some way up their steep and slippery heights.

The 26th was a memorable day with the little party, for they then passed the "Farthest South" previously reached by man, and at night found themselves in latitude $82^{\circ} 18' 30''$ south. Still pushing on their lonely way, "the tiny black specks," as Shackleton described himself and his companions, "crawling slowly and painfully across the white plain," found once more a treacherous surface into which the ponies sank from time to time.

Reaching Depot C on the 28th, they shot

another of the ponies. The halt there was brief, and on the four brave men went. Steadily they were making their way south, accomplishing a good march each day, in spite of many difficulties. They had covered over 300 miles due south in less than a month. This was distinctly encouraging.

By the 1st of December the two remaining ponies were almost exhausted; in addition, they were suffering from snow-blindness, and one of them had to be shot. A day or two later, crevasses once more threatened life and hindered progress, the men being sometimes close up to them before the danger was discovered. One false step would have flung them into the "blue-black depths," and brought the expedition to a sudden end. To get the sledges over these openings was a task of no little difficulty; but by reducing their loads, and returning for what had been left behind, it was successfully accomplished. One enormous chasm, of about 80 feet wide and 300 feet deep, lay right across their route, making a detour necessary.

Leaving the ice of the Barrier, Shackleton and his companions began the ascent of the great glacier, climbing Mount Hope in order to see what lay beyond the mountains.

On the 7th the party lost their last pony. In his diary for that day Shackleton has put on

record that the crevasses were particularly bad, and that in the slopes of deep snow the pony frequently sank down to his middle. As they were marching along, a cry for help suddenly broke from the lips of Wild. Rushing to his assistance, his companions were horrified to see the pony-sledge with the forward end down a crevasse, and Wild reaching over the side of the gulf and grasping the sledge.

Wild was speedily rescued, but the pony had disappeared; and though they got down on their stomachs and looked over into the gulf, nothing could be seen of the missing animal; only a bottomless pit met their gaze.

Deprived in this tragic manner of the assistance of their hardy little pony, the travelers made the best of the situation. They hitched themselves to the pony-sledge, and crept along through the maze of crevasses and rotten ice until they reached a spot where they could with safety pitch their tent and encamp for the night. But the finding of such a resting-place was not easy.

Two days after the pony's disappearance the four travelers were still among these yawning pits that threatened destruction at every step. Slender bridges of snow covered the crevasses and concealed the depths beneath. Thus, while they thought their footing secure, they might be

treading a covering which at any minute would give way beneath their weight and send them to their death. Marshall had an exceedingly narrow escape, being saved only by his harness after he had disappeared below the level of the ice; and, soon afterwards, Adams and Shackleton had in turn a similar experience and, fortunately, a similar escape.

The conditions, instead of improving, grew worse. "Sharp-edged blue ice, full of chasms and crevasses, made a surface that could not be equalled for difficulty in traveling." Often it was impossible to drag more than one sledge at a time over this sharp and treacherous surface; and after pulling one sledge for a mile, they would return for the other. This added greatly to the day's toil, and retarded their progress to such an extent that one day they covered a distance of only three miles. Shackleton tells us that this day they were a mass of bruises from repeated falls on the sharp ice.

The 14th provided the travelers with as hard a day's work as they had yet experienced. All day long they were steering their way up the glacier. Snow had fallen nearly all day, and as the temperature was high everything became very wet. But there was no standing still, for every moment was precious; and after ascending over 1000 feet, they found themselves 5600

feet above the level of the sea. It had been a heavy pull, with many falls on the slippery ice; and, just before they halted for the night, Adams had another wonderful escape, sinking through some soft snow and being "held up over an awful chasm." The following day found them in latitude $84^{\circ} 50'$ south.

Eager to make all possible haste to reach the goal, they decided to travel from this stage onwards with as little weight as possible. They left behind four days' food, which Shackleton calculated would get them back to the last depot on short rations. They had now traversed nearly a hundred miles of crevassed ice, and risen 6000 feet on "the largest glacier in the world."

And so the brave little party fought their way farther and farther south, dragging their sledges over smooth ice that scarcely gave a hold to the feet, struggling all day long against the biting wind that stung their faces, cutting steps with their ice-axes as they went along, and using the long Alpine rope to haul the sledges up the precipitous slopes. The courage of the explorers never forsook them, and they continued to push ahead.

Reaching the plateau on the 18th, they continued to ascend; and, though tired and hungry, worked hard at the sledges. Anxious to

make the food eke out as long as possible, they limited their daily supplies; and each night, as they lay down hungry in their sleeping-bags, they dreamt of tempting banquets and of tables laden with all that the appetite of man could desire.

Christmas Day found them on the summit of the plateau, in forty-eight degrees of frost, among drift-snow, and buffeted by a bitter wind. For the first time for many days they enjoyed the luxury of a good meal, in celebration of the occasion. "We are full to-night," says Shackleton in his diary, "and it is the last time we shall be so for many a long day. After dinner we discussed the situation, and decided to reduce our food still further."

Before them lay a long road; they had 570 miles still to do to get to the Pole and back to where they then stood. As they had only one month's food and three weeks' biscuits, they resolved to make each week's food last ten days, and have one biscuit in the morning, three at midday, and two at night—an allowance that proved quite insufficient for their needs. Before many more days had passed, Shackleton and his companions were suffering from severe headaches, and in their weakened condition they suffered intensely from the cold. On the 30th a blizzard drove them to the shelter of their

sleeping-bags, after they had been but four hours on the road; and that day's travel was four miles only.

We find them on January 2, 1909, moving with heavy steps through the soft snow, Shackleton's head giving him trouble all the time. He could not bear to think of failure; but he felt that he must consider the lives of the men who had accompanied him, and that if they went too far, it might be impossible for them to get back over that terrible surface.

On the 6th, another blizzard swept down upon them; and for the next couple of days they were confined to their bags, with the temperature ranging from sixty to seventy degrees. When, on the 9th, they were again able to step out into the open, they recognized that their outward march was nearly ended, and that they must think of returning.

Starting at 4 A. M. for their last rush southwards, ere they began to retrace their steps, and taking with them only food, instruments, and the flag given to them by Queen Alexandra, they traveled, half-running, half-walking, for five hours, reaching latitude $88^{\circ} 23'$ at nine o'clock. There they hoisted the flag, and took possession of the plateau in the name of King Edward.

Ahead of them, only ninety-seven geograph-

ical miles away, lay the South Pole, the goal of all their strivings; but across that frozen stretch of snow and ice it was impossible to go. Looking through their powerful glasses, they scanned the horizon to the south; but only the great, white snow-plain could be seen. "There was no break in the plateau," says Shackleton, "as it extended towards the Pole, and we feel sure that the goal we have failed to reach lies on this plain."

There, on this immense plateau, more than 10,000 feet above sea-level, the Pole kept its secret; while the men who had struggled to reach it turned their faces to the north and stepped out for home.

As the four men had hurried towards the Pole with feverish eagerness, so did they make their way back with equal haste. There was no time to lose, if they were not to starve and die by the way. Every minute was precious. They hastened over the slippery ice-slopes, and crossed pressure-ridges and crevasses at full speed.

Weakened by the privations they had endured, and now reduced to four biscuits a day each, the weary travelers could scarcely keep moving. They ate the last of their solid food on the 26th, and the next day they were almost too exhausted to continue. But they were coming near to the depot, and the prospect of hav-

ing something to eat spurred their lagging limbs to renewed effort. Hurrying on to the depot, Marshall returned with some pony-meat and biscuits, which provided the party with the first food they had tasted for thirty-two hours.

Leaving the plateau behind, and treading the surface of the Barrier once more, they encountered another blizzard, which obscured nearly everything from view; they could see only a few yards in front; but they dared not stand still, and they pushed on through the blinding snow-storm.

It now required a great effort to cover one mile and a half in the hour; and, to make matters worse, all the party were attacked with dysentery. Reaching the depot, in $82^{\circ} 45'$ south, they picked up some scanty provisions and the sledge which had been left at that stage, and on February 3 started off afresh. A day later they were again all laid low with dysentery, so that no march was possible. They managed to resume their journey on the following day, but it was only with the greatest difficulty that they did so.

Reduced to half a pannikin of warmed meat and five biscuits a day for each man, they kept moving, and made a little better progress than before. On the 13th, all their food finished, they reached the depot where the second pony had been killed.

Taking the pony-meat and biscuits that were there, to serve them till they reached Depot A, ninety miles farther north, they once more resumed their march. They now covered the ground at a smarter rate, and frequently traveled more than twenty miles in the course of the day. So, day by day, the distance between them and headquarters gradually lessened. They were doing bravely in their struggle, and their strength was being fairly well maintained on the flesh of their dead pony.

On the 22nd they came upon the tracks of a party of four men with dogs. This encouraged them in the hope that food had been safely deposited for them at a point called the Bluff. At this depot they found plenty of food, and there also they learned of the *Nimrod's* return.

With better heart they resumed their march; but one more trouble was in store for them. Suffering from another attack of dysentery, Marshall became too ill to proceed, and leaving him under the care of Adams, Shackleton and Wild made a forced march of thirty-three miles to the ship, which they reached on the 1st of March.

Shackleton, who had been without sleep for twenty-four hours, might well have handed over to his officers the task of rescuing the two men who had been left behind, waiting, in their weak-

ness and loneliness, for help; but he preferred to do the work himself. Taking time only to eat a hasty meal, he immediately started back to the relief of Marshall and Adams. He reached them after traveling for a day and a half, and brought them back in safety to the ship. With little sleep, he had traveled ninety-nine miles in three days, at the end of a journey of 1700 miles—an achievement worthy of being ranked among the greatest feats of Polar enterprise.

During the absence of Shackleton and his comrades on the march towards the Pole, the other members of the expedition also had been busy. The northern party, under Professor David, left the winter quarters, with the object of discovering the Magnetic Pole. In their long and perilous journey they experienced similar difficulties to those that fell to the lot of Shackleton and his men. They, too, had to climb a plateau which was intersected with numerous crevasses; and they frequently disappeared in them, but fortunately without serious consequences.

Climbing a succession of frozen terraces, they found themselves between 7000 and 8000 feet above sea-level, and on January 16, 1909, triumphantly reached the goal of their labors in latitude $72^{\circ} 45'$ south, longitude $155^{\circ} 16'$ east.

There, at the Magnetic Pole, they proudly hoisted the Union Jack. On their way back they were picked up by the *Nimrod*, after many perils and adventures, and in a pitiable plight through hunger and weakness.

Excellent work was accomplished also by the party which explored the western mountains with the object of learning something of their geology. This little band also had its adventures. One night, the three men constituting the party camped on an ice-floe. The following morning they were horrified to discover that the floe was adrift, and apparently bearing them to certain death. Throughout the day the ice continued its drift towards the sea, the men cheering each other as well as they could under the gloomy circumstances.

Fortunately a change in the current during the night brought the floe into temporary touch with the land ice. Seizing the opportunity, the explorers quickly escaped from the moving ice to a more secure position, leaving the floe to continue its course to the north. Next day the ship was sighted about eleven miles away; and the men were soon safely on board and enjoying her comfortable shelter.

Without the loss of a single man, and with every member of the expedition in the best of health, the *Nimrod* shortly afterwards sailed

north. All on board were highly satisfied with the results of the expedition; but they were glad, nevertheless, to be once more on the way back to civilization and friends.

XXI

THE GREAT RACE TO THE GOAL

THE success of Shackleton's wonderful march over the frozen wastes had shown what could be accomplished by the adoption of wise methods; and other explorers now prepared to hasten southwards, each fired with the ambition to reach the goal ahead of his rivals.

Hoping to win the honor of being first at the South Pole, Dr. J. B. Charcot's French expedition, which set out in 1908, was in the Polar waters while the world was listening to the high achievements of Sir Ernest Shackleton. Although Charcot did not succeed in his attempt to reach the Pole, he claimed that the entire scientific program of his expedition was carried out. Collisions with icebergs, terrific tempests, and shortness of food and coal were among the hardships experienced; but they were borne with cheerfulness.

In the ship, the *Pourquoi Pas*,* the expedition, during the first summer, was able to complete the French map as far as Adelaide Island, seventy miles in breadth, lying to the south of a vast gulf. A stretch of new land, 120 miles

* *Pourquoi pas?* = *Why not?*

long, was surveyed, and the expedition ultimately reached Alexander I. Land. Wintering at Petermann Island, they experienced severe weather, and several members of the expedition were attacked with sickness.

When the Antarctic summer came round, the expedition carried out exploration work in the South Shetlands and subsequently went south again, discovering new land to the west and south of Alexander I. Land. Sir Ernest Shackleton regards these discoveries as particularly important, as they help to link up that part of the continent with King Edward VII. Land.

Describing one of his experiences during this expedition, Charcot says they were lying in a bay which they had discovered, and which he had named Marguerite Bay, after his wife. "Everything seemed quiet, and we were preparing for an expedition on the ice. There was a small iceberg about five hundred yards from the *Pourquoi Pas*. Two of us had been out in a boat to take soundings and make observations on the berg itself only a few hours before.

"I was writing in my cabin—it was about half-past eleven at night—when suddenly a tremendous roar was heard. I sprang on deck, to find that the iceberg was capsizing. It was coming straight towards us, rolling on its axis, big slices breaking off as it advanced. By the rarest

of good fortune we had steam up. I signalled to the engineer, who fortunately understood my gesture, to go full speed astern; and at the same time I ordered the crew to slip the cables.

“On came the berg, passing clean over the spot where we had been moored to the ice a few seconds before. So narrow was our escape that it smashed one of our boats, and a lump of the iceberg broke off and wedged itself under the bowsprit. If we had been in bed, with only the ordinary lookout on deck, that would have been the last ever heard of us and the *Pourquoi Pas!*”

Charcot having failed to reach the Pole, the way was still open, and the honor of being first there became a matter of international competition. The representatives of the Union Jack were determined that, having carried their flag to within less than a hundred miles of the goal, they would not rest content till they saw it fluttering at the Pole itself. But there were rivals in the field. America, ambitious for a double victory, and Germany, were also busily making preparations for running in the race Polewards.

In command of the British expedition was Captain R. F. Scott, whose work in connection with the famous *Discovery* expedition has already been described. His new ship, *Terra Nova*, took her departure on June 1, 1910.

Well fitted for ice-navigation, this vessel was the largest and strongest of the old Scottish whalers, and in 1903 was purchased by the Admiralty as relief-ship for the *Discovery* expedition.

The main object of the expedition was to reach the South Pole, and secure the honor of that achievement for the British Empire. The plan for the journey to the Pole from King Edward VII. Land included the use of three methods of sledge-traveling. For the first time in the history of Antarctic exploration motor-sledges were to be used. Ponies were taken in sufficient numbers to ensure a thoroughly adequate amount of food being conveyed to the base of the glacier. A dog-team, with a relay of men, was to transport the loads over the glacier surface; and a picked party of men and dogs were to make the final dash across the inland ice-sheet.

The principal scientific objects of the expedition were to explore King Edward VII. Land; to throw further light on the nature and extent of the Great Barrier ice-formation; to continue the survey of the high, mountainous region of Victoria Land; and to add to the magnetic records made by the *Discovery* Expedition. This comprehensive program necessitated the establishment of a strong party of men at the winter-

station, and a more ample equipment than had hitherto been taken.

Captain Scott had thought out the idea of the motor-sledge after his last expedition; and though he did not rely upon it altogether, he had great hope of its utility. "The sledge," he explained, "lays its own track. A twelve to fifteen-horse-power engine drives the two rear wheels. Connecting these with the front wheels are two endless bands, having flat pieces of wood on the outside and rollers on the inside. The sledge-wheels run on the inside rollers. Carrying a load of nearly two tons, partly food, partly fuel, a sledge can travel three miles an hour. In that time the engine consumes one gallon of petrol.

"It may not prove possible," continued Captain Scott, "to take the motor-sledges over the glaciers. If not, we must drop them. At stages on the dash across the mountain regions we shall leave behind four of the men, then another four, then a third four. At each selection the fittest will go on. The four who prove finally the fittest will make for the Pole. Our prospects of success will be greatly improved if, as I strongly hope, the dogs are able to climb the glaciers. If not, the men themselves will be compelled to haul the dog-sledges."

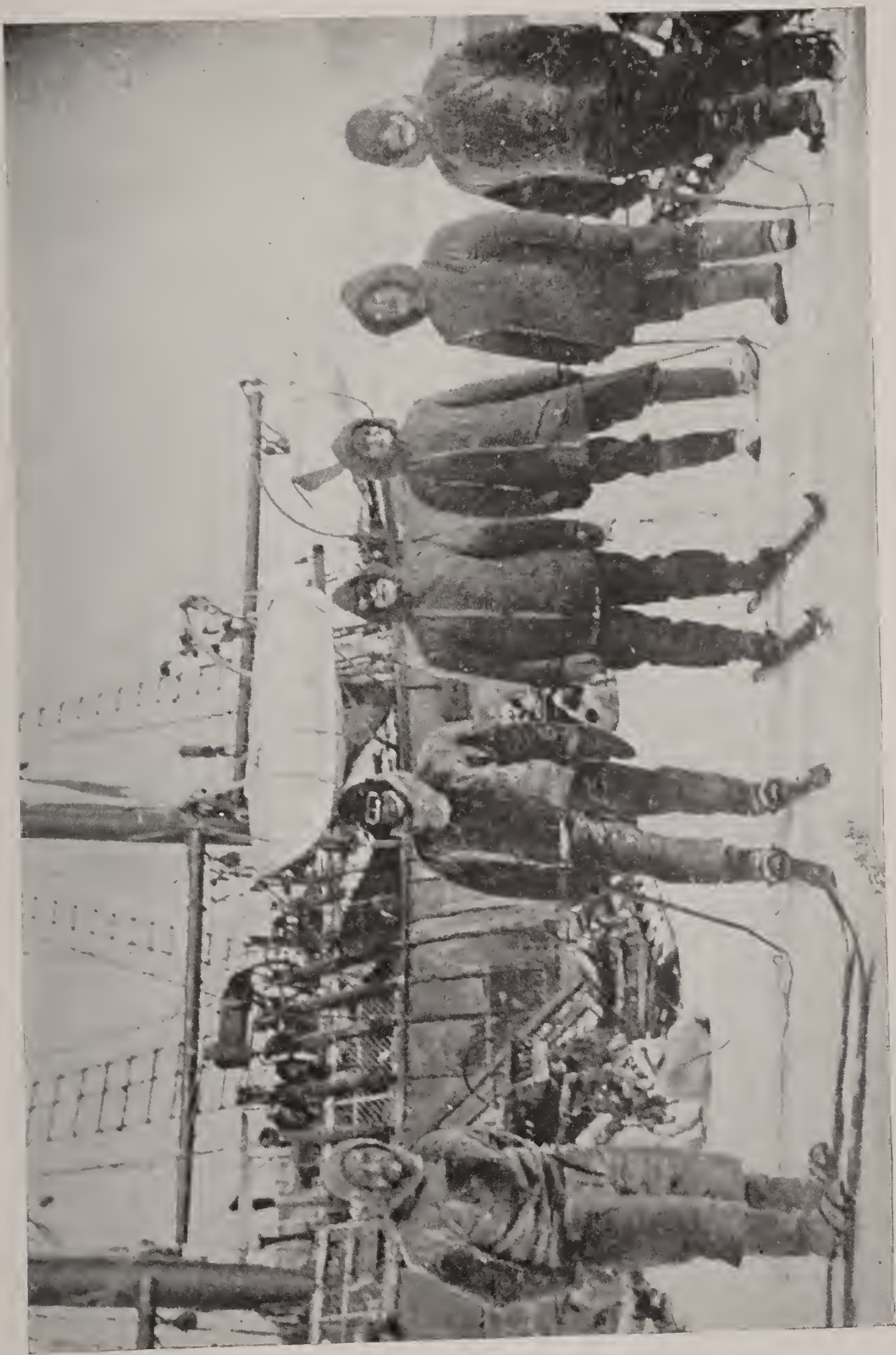
Captain Scott regarded the proposed Amer-

ican expedition only in the friendliest light. Both expeditions would be starting for the Pole about the same time. "From the American base, on the Weddell Sea," Captain Scott said, "there is thought to be a gradual slope upwards to the Pole. The Americans will have two mountains and glaciers to cross, most probably; but up to the present time no suitable spot for wintering is known to exist in that part of the Antarctic continent."

Meanwhile, still another nation was in the race for the South Pole. This was Norway, represented by Captain Roald Amundsen and his stout ship, the *Fram*.

But a little while before, nothing was farther from Amundsen's thoughts than a voyage into the Southern regions. He was, in fact, making preparations to lead the *Fram's* third expedition towards the North Pole, when the news of Peary's success was flashed across the world. He then resolved to alter his course and make a bold attempt to solve the problem of the South.

Leaving Norway about the middle of August, 1910, the *Fram* reached Ross Sea towards the end of the same year; and the Bay of Whales in the great Antarctic Barrier, chosen as the base of operations, was reached in the middle of January. A well-sheltered site was selected as winter quarters; and, as weather permitted,



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THE *FRAM* AND MEMBERS OF THE AMUNDSEN EXPEDITION ON SKIS

parties were despatched to establish food-supplies along the route to the south. The winter months passed uneventfully, the leader carefully maturing his plans, and waiting patiently for the day when he would embark in earnest upon the great enterprise of his life.

The Antarctic spring broke about the middle of October, and on the 20th a start was made for the Pole, the party consisting of five men, fifty-two dogs, and four sledges. Everything went well from the start, although blizzards were encountered during the early days of the march and the usual dangers were met with from snow-covered crevasses. But, on the whole, it was more like a pleasure-trip than a hazardous venture into wind-swept and ice-bound regions. The little party pushed steadily southwards for nearly two months, and at last, on December 14, stood at the very Pole itself.

Describing this day of days, Captain Amundsen says: "I have a feeling that we slept less, breakfasted at a greater speed, and started earlier this morning (the 14th) than on the previous days. The day was fine as usual—brilliant sunshine with a gentle breeze. We made good headway. We didn't talk much. Everybody was occupied with his own thoughts; or probably all of us had the same thought, which caused us to look towards the south over the

endless plateau. Were we the first, or—Halt! The distance was covered, the goal reached. The mighty plateau stretched before us, untrodden by the foot of man. No sign or mark in any direction! It was a solemn moment for all of us when, with our hands on the flagstaff, we planted the colors of our country at the South Pole, on King Haakon VII. Plateau.”

For several days Amundsen and his comrades remained in the neighborhood of the Pole. On the 15th three members of the party made a circle round the camp, with a radius of ten miles; while others took hourly observations, which gave the latitude as $89^{\circ} 55' S$.

The next day the camp was moved five miles farther south, and there a little tent brought for the purpose was erected at the very Pole, the Norwegian flag with the *Fram* pendant was hoisted, and the place was named Polheim. A letter addressed to Haakon VII., to be brought back by the next explorer to reach the Pole, was left in the tent, together with some clothing and a few scientific instruments.

One thing Amundsen did not leave, though he thought of doing so. That was a quantity of oil—two five-gallon cans—which he thought would not be required on the return journey. In the light of later events Amundsen bitterly regretted this decision, for it might have pro-



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LIEUT. HANSEN OF THE AMUNDSEN EXPEDITION STANDING
AT THE SOUTH POLE

vided the British party under Scott that followed him a month later with the fuel they so sorely needed, and might possibly have prevented the disaster which ended that courageous enterprise.

Extending over 750 miles, the outward journey of Amundsen's party had been accomplished at an average of thirteen miles a day; but good as this record was, it was exceeded on the homeward run, when, again favored by splendid conditions, the average daily speed was nineteen miles. The snow beacons erected by the party when traveling south enabled them to find their way back with comparative ease; and with the joy of achievement as a stimulant to their energies, they sped rapidly over the snow and ice, unhampered by ill-health or shortage of food.

While Amundsen and his men were stepping lightly along, the British explorers were fighting hardship every inch of their way. The Norwegians had struck an easy route and favorable weather; the British party, starting from McMurdo Sound, where the headquarters had been established, and where earlier expeditions had wintered, found both the track and the weather extremely trying. Both parties reached the Pole; but while the good fortune of the Norwegians clung to them all the way back, Captain Scott's party experienced terrible hardships,

and at last succumbed when 155 miles from the base, too weak to reach the stores, only eleven miles away, that would have saved their lives.

Exploring the Antarctic coast line in February, 1911, the British sighted the *Fram*, when Scott learned with considerable surprise that Captain Amundsen, instead of being in the Northern waters, according to his declared intention, was making preparations for a dash to the South Pole. But this had no effect upon the program of the British party. Scott resisted the temptation to take part in a race for the Pole by making a premature start; being acquainted with the risks of the journey, he was determined to leave nothing to chance.

The winter was spent by the explorers in preparing for the run southwards when the coming of spring should permit of traveling over the icy wastes. Then with four companions—Dr. E. A. Wilson, zoologist and artist; Lieutenant H. R. Bowers, of the Royal Indian Marine, in charge of the commissariat; Captain L. E. G. Oates, of the Inniskilling Dragoons, in charge of the ponies; and Petty-Officer Evans, of the Royal Navy, in charge of the sledges and equipment—Captain Scott had entered on the last stage of the journey.

Captain Scott's own story of the expedition up to that point showed that many difficulties

and perils had been met with, that ponies and motor-sledges had broken down under the severe strain, and that blinding blizzards had added to the dangers and the hardships of the journey.

At one part of the way, when cutting off a corner at White Island in bad light, the whole of the dog team fell into a crevasse, and were extricated with great difficulty after three hours' hard work. In spite of many drawbacks, however, steady progress was made; and on January 3, 1912, writing in latitude $87^{\circ} 32'$ S., from a height of about 9800 feet, Captain Scott stated that after leaving the upper glacier south of Mount Darwin, he had steered south-west for two days.

"This did not," he continued, "keep us clear of the pressure ridges and crevasses, which occurred frequently, and at first gave us some trouble, but we rose rapidly in altitude. On Christmas Day we were close up to the 86th parallel; and the prospect of Christmas fare gave us an excellent march of seventeen miles."

After the last of the supporting parties had turned back, the five men maintained an average of twelve miles a day right up to the Pole, which they reached on January 17, 1912. Here they found Amundsen's tent and records left only a month earlier. The whole story was then clear to them. They had been beaten in their

race to the Pole. After all their struggle it was a barren honor.

"It is a terrible disappointment," is Scott's only comment; "and I am very sorry for my loyal companions."

At the Pole the temperature was 20° below zero. It was found that the surface, unlike that of the Barrier, was soft, and had no crust on it.

They planted the British flag near the Norwegian, and after remaining two days resting, making observations, and leaving records, they started back. The return journey over the Polar plateau began well, marked by good marches and moderately good weather; but sterner conditions lay ahead. The surfaces became more difficult, and in the descent of the Beardmore Glacier the weather was exceptionally thick, with snow falling and the surrounding land only occasionally to be seen.

Bad, however, as the conditions around them had become, they were not the only perils encountered. Evans, the "strong man of the party," began to show signs of weakness at the Pole; and on the plateau he was a great anxiety to his companions. Then, in their descent of the Glacier, Evans fell among the rough ice, seriously injuring his head. With a weak and injured comrade on their hands, the others were compelled to moderate their pace, and in consequence the

surplus food was gradually diminished. The pace, however, slow as it had become, was too much for the enfeebled traveler. He became so weak that he had to be carried on the sledge; and on February 17 he died, at the foot of the Beardmore Glacier.

The next to give way under the terrible strain was Captain Oates, who had been struggling bravely on, in spite of badly frost-bitten hands and feet. By March 16 it was obvious that he could not last much longer. "He was a brave soul," wrote Captain Scott, in recording his death. "He slept through the night hoping not to wake, but he awoke in the morning. It was blowing a blizzard. Oates said, 'I am going outside, and I may be some time.' He went out into the blizzard, and we have not seen him since. We knew that Oates was walking to his death, but though we tried to dissuade him, we knew it was the act of a brave man and an English gentleman."

The party, now reduced to three, once more pushed on as fast as the weather, which had become extremely bad, would permit them; but they were forced to camp five days later. Only eleven miles separated them from the One Ton Camp, where food and fuel awaited them, but which they were never to reach; and while the blizzard raged furiously around their tent they,

one by one, passed into the sleep that knows no waking.

Months later a search-party discovered the three bodies, and found the diary of their leader, in which the pitiful story was set forth.

"The causes of this disaster are not due to faulty 'organization,' but to misfortune.

"The loss of pony transport in March, 1911, obliged me to start later than I had intended, and obliged the limits of stuff transported to be narrowed.

"The weather throughout the outward journey, and especially the long gale in 83° S., stopped us.

"The soft snow in the lower reaches of the glacier again reduced the pace. We fought these untoward events with a will, and conquered, but it ate into our provisions-reserve. Every detail of our food-supplies, clothing, and depots made on the interior ice-sheet, and on that long stretch of 700 miles to the Pole and back, worked out to perfection.

"The advance-party would have returned to the glacier in fine form, and with a surplus of food, but for the astonishing failure of the man whom we had least expected to fail. Seaman Edgar Evans was thought the strong man of the party, and the Beardmore Glacier is not difficult in fine weather.

“But on our return we did not get a single completely fine day. This, with a sick companion, enormously increased our anxieties.

“I have said elsewhere we got into frightfully rough ice, and Edgar Evans received a concussion of the brain. He died a natural death, but left us a shaken party, with the season unduly advanced.

“But all the facts above enumerated were as nothing to the surprise which awaited us on the Barrier. I maintain that our arrangements for returning were quite adequate, and that no one in the world would have expected the temperature and surface which we encountered at this time of the year. On the summit in lat. 85° to lat. 86° we had minus 20° to minus 30° . On the Barrier in lat. 82° , 10,000 feet lower, we had minus 30° in the day and minus 47° at night pretty regularly, with a continuous head-wind during our day-marches.

“I do not think human beings ever came through such a month as we have come through; and we should have got through, in spite of the weather, but for the sickening of a second companion, Captain Oates, and a shortage of fuel in our depots for which I cannot account; and, finally, but for the storm which has fallen on us within eleven miles of the depot at which we hoped to secure the final supplies.

“Surely misfortune could scarcely have exceeded this last blow. We arrived within eleven miles of our old One Ton Camp with fuel for one hot meal and food for two days.

“For four days we have been unable to leave the tent, a gale blowing about us.

“We are weak, writing is difficult, but for my own sake I do not regret this journey, which has shown us that Englishmen can endure hardship, help one another, and meet death with as great a fortitude as ever in the past.

“We took risks—we know we took them.

“Things have come out against us, and therefore we have no cause for complaint, but bow to the will of Providence, determined still to do our best to the last.....

“Had we lived I should have had a tale to tell of the hardihood, endurance, and courage of my companions which would have stirred the heart of every Englishman.”

To Scott's pathetic narrative there is little to add. The bodies were discovered a few months later by the party that had gone in search of their comrades. Captain Scott, apparently the last to die, was found sitting with his back to the tent-pole, with his diary resting between him and the pole; while Wilson and Bowers were lying in their sleeping-bags.

It looked as if the commander had taken fare- ”

well of his fellow-sufferers as they lay in the bags that were to prove their shroud; and then, having seen them close their eyes in death, he himself sat down to wait for the end. Hope had fled, but the spirit of the man was unconquered. Not a word of complaint did he write as his frozen fingers slowly penned his farewell to the world. He "bowed to the will of Providence."

XXII

RECENT VOYAGES

THE untimely death of Scott, like that of Franklin in an earlier period of Polar exploration, stirred up a profound popular interest in the subject. All the world united with England in tributes to the memory of the heroic voyagers. Although both the North and the South Poles had been discovered, it was felt that no stone must be left unturned to map out the unknown lands lying near the Poles.

This was the task which Sir Ernest Shackleton now set himself, in a ship appropriately called the *Quest*. Shackleton, we remember, served his apprenticeship with Scott and on a later independent voyage achieved the "Farthest South" until the Pole itself was discovered.

Shackleton's new expedition reached the southern seas in the latter part of 1921, on what was to have been a prolonged voyage of exploration and discovery, partly of Enderby Land. This land had been first reported by Captain Enderby nearly a century earlier, but no one after himself had ever located it. But Shackleton himself did not live to carry out the adventure. He died suddenly on board his ship, off



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THE QUEST ON WHICH SHACKLETON DIED

the coast of South Georgia Island, from natural causes.

The most completely equipped of all Antarctic expeditions was that of Captain J. Lochlan Cope, who was a member of the last Shackleton expedition as surgeon and biologist to the Ross Sea party. The official name chosen was British Imperial Antarctic Expedition. The ship chosen was the *Terra Nova*, Captain Scott's old vessel, upon which very extensive alterations had been made, including the installation of oil-burning engines and the building of an additional deck. A novel feature was the proposed use of an airplane with which to cross the Antarctic continent and to carry on surveying and photographic work. A machine capable of carrying three men, photographic apparatus, wireless apparatus, a sledge, the necessary gasoline, and provisions for a month were taken along. The intention was to leave a depot of gasoline near Axel Heiberg Glacier before crossing the high interior mountains, and to make use of the fuel on the return trip from the Pole.

The general plan was to proceed from Wellington to Macquarie Island, to make a survey of it, and to proceed to Scott Island, where three men were to be landed with a specially constructed hut. They were to remain there one year and carry on meteorological work. From

Scott Island the *Terra Nova* was to go to New Harbor in the Ross Sea, where a large hut was to be set up. Thence the vessel was to proceed to Cape Crozier on Ross Island, where three men were to be left a year to study the emperor penguins and do meteorological work, a small hut being provided for them. An attempt was to be made to fly by airplane to the Pole itself. This work was to be the preliminary of another expedition which would work for four or five years and attempt to circumnavigate the Antarctic Continent.

Several other airplanes and an extensive wireless system, by means of which it was hoped to keep in touch with civilization at all times, were to be held in reserve.

Commander Cope before starting south said that while the *Thor I.* was circumnavigating the lower part of the continent her sister ship, sailing from Cape Ann, would go around the Bay of Whales and the upper part of the Continent, completing the circle. The other airplanes, meanwhile, were to be utilized on shore. They have a cruising radius of 1,000 miles, but the first year were to be sent out only 250 miles for the establishment of new patrol bases and the following year sent out an additional 250 miles. The *Thor I.* was scheduled, according to Commander Cope's plans, to return to New

Zealand in 1926 at about the same time that her sister ship returned to South America.

“Previous Antarctic explorations have been adventures,” said Commander Cope. “This one is a scientific and commercial proposition. The final object of our enterprise is a search for the mineral wealth with which we are sure the South Polar regions abound.” In addition to the minerals previously mentioned, he said that Antarctica was rich in gold, silver, copper and lead in the chain of mountains that rise like gigantic sentinels guarding the secret of its vast and icy polar fields.

Meanwhile voyagers to the North have not been idle. Captain Roald Amundsen, who had already won fame in both Poles, once more turned his attention to Arctic discovery. He had been the first to navigate the Northwest Passage, but not content he set sail again, this time eastward from Norway, in June, 1918, in the *Maud*.

Nothing was heard of the intrepid explorer for nearly two years, when he arrived at Anadir, a Siberian trading post. In July, 1920, he reached Nome, Alaska.

His plan then was to proceed to the north and drift across or near the North Pole in the ice. The new start was made August 7, but word was received at Nome, September 26, that the *Maud*

had not proceeded far before it was locked in the ice between Wrangell Island and the northern Siberian coast. Captain Amundsen then had a crew of only three men with him.

Following is an account of the trip of the *Maud* in the waters of the Arctic between the ice pack and the northern edges of Europe and America, which in connection with the voyage through the Northwest Passage from the Atlantic to the Pacific, in 1906, gave Captain Amundsen the honor of being the first to circumnavigate the globe north of Europe, Asia and America:

“We left our winter place on September 12, 1919, after having mined and forced our way through 2,500 yards of unbroken ice from two to three yards thick. We were detained next day by heavy pack at St. Samuel’s Island, but got through on the 14th and continued our way to the east, being again detained next day, as the ice lay close to St. Peter’s Island and did not assist any passage outside.

“We had to force our way through the unknown strait between the islands and the mainland, where newly-formed ice offered considerable resistance. We succeeded after a vigorous battle in penetrating this intricate and shallow passage, showing in some places no more than one and a half feet of water under the keel.

“Much ice was found in the Nordenskiöld

Sea, but it offered small hindrance to our advance. We passed through the Strait of Laptec, separating the inner Siberian islands from the mainland, on the 19th. The sea to the east of the islands seemed free from ice and we shaped our course from Jeannette Island, but were stopped next morning by impenetrable pack on the 73rd parallel.

“We made fast to the edge to begin our drift, but found shortly after, by close examination, that the ice pack was in drift toward the south at the rate of one and a half knots an hour. This would not do, so we cast loose from the ice, after a very careful inspection, which left us no hope whatsoever of penetrating it, and shaped our course to the southeast, following the ice.

“It was a bitter pill to swallow, but we decided to search for winter quarters somewhere along the coast. The only fit place was Tschaun Bay. Navigation southward here in the latter part of September was most extraordinary: the nights were pitch dark, the sea running heavy, and enormous ice floes very often in the middle of our course—it was not pleasant. From time to time a brilliant aurora borealis would appear and light us out of many an intricate situation.

“A northwest gale had been blowing all this time, and the result was that the pack ice

reached our intended winter quarters just a little ahead of us and shut us out. We had no choice, as the ice came closer and closer to the coast. We went, therefore, as far as the ice permitted, and, plunging into some old floes fringing the west coast of Aion Island, remained there.

“Three days after our arrival there we met with some members of the Tschuktschi and Maquati tribes. They had their tents on Aion Island but left for the interior of the country on October 13, to spend the winter in the woods watching their reindeer herds.”

Two members of the expedition named Knudsen and Tessen left the ship with mail for home, but nothing further was heard from them and it was assumed that they were lost.

The *Maud* was often so heavily weighed down by ice that the propeller and the helm were frozen and only the masts were visible above the surface. Bears were heard padding across the snow masses covering the ship's deck. By the time she reached Cape Cheliuskin the *Maud* encountered extremely hard, heavy ice, but, thanks to her splendid construction, she withstood all the attacks of the elements.

New land was discovered near Tsar Nicholas II. Land, and it was scientifically explored. A thorough study of the customs and manners of

the surrounding Eskimo tribes was also made. Several adventures occurred. Amundsen himself fell from the ship down on to the ice and broke one of his arms, and he also had a narrow escape in an encounter with a bear.

Amundsen refitted the *Maud* after this cruise and, on June 3, 1922, set sail again northward on a still more ambitious quest. He planned a five-year voyage among the ice packs surrounding the Pole, a study of magnetic currents, and—most ambitious of all—an airplane flight directly across the Pole. He said, on leaving, that he hoped to map out an Arctic route for airplanes which would be commercially feasible as providing much shorter “hops” to adjacent countries, than if one followed the temperate zone.

Greenland has been the object of special study on the part of Denmark. In 1919, the Danish explorer, Knud Rasmussen, returned from a voyage to the east coast, where he made a prolonged study of the Eskimos. He was followed by Lange Koch, another Dane, who set out on a two years' cruise, the objective point being North Point, in order to proclaim Danish sovereignty over the whole of Greenland.

Baffin Land, a very rich and alluring field for explorers and scientists, was the object of an expedition which was sent out in the summer of

1921, under Donald B. MacMillan, one of Peary's lieutenants on the expedition that reached the North Pole. During the following winter the object was to explore the coast of Baffin Land, and the next summer the party planned to penetrate the interior. Very little is now known about the territory whose whole western shore, of perhaps 1,000 miles in length, is but vaguely defined on charts.

MacMillan's ship was a tiny schooner of only 115 tons, eighty-seven feet long, and drawing ten feet of water. But she was equipped to the last inch, and every inch was utilized. Auxiliary power, through the use of crude oil, and a wireless equipment were among the new features devised by the Captain and his associates.

"I hope to make new Arctic history with this little boat," explained MacMillan. "My theory is that too many of the craft which have penetrated those regions have been unwieldy, thus lending themselves too readily to the clutches of the winter ice. The *Bowdoin's* round, egg-shaped hull, I believe, will ride atop of the ice when it begins to form early in the fall, and because of her compactness and diminutive size, she will weather it, we hope. Of course, one can never tell till afterward. If the boat is demolished, we have our plans, of course, to gain the settlements over the ice."

Another large island which has recently attracted attention is Wrangell Island, which is about the size of Jamaica, lies 100 miles off the northeastern coast of Siberia and 400 miles west of Bering Strait, in latitude 71 degrees, north, and longitude 180 degrees. For the most part it is a typical grass-covered Arctic prairie, noted for its interior granite cliffs, which reach a height of 2,000 feet, and also famed as the paradise of the polar bear.

The British flag was hoisted anew over this island in March, 1922, by Vilhjalmur Stefansson, although an American expedition laid claim to it as early as 1881. The island was, in fact, discovered in 1849. The final attempt to claim ownership, therefore, aroused a three-cornered controversy between America, Canada, and England.

Stefansson had previously made a series of voyages with the object of testing the resources and living conditions of Arctic Canada. His findings were so sensational and unusual as to attract world-wide attention. He boldly upset existing notions that the Arctic regions are devoid of life. His book, "The Friendly Arctic," is an extraordinary narrative of five years' exploration and scientific research by the Canadian Arctic Expedition, which was authorized, financed and directed by the Canadian Govern-

ment. "The book presents a totally new aspect of the Arctic region. Stefansson shows that, because of the climatic conditions and pasture resources, Arctic Canada must inevitably be added to the world's area of food production. His experiences have brought out important revelations regarding the possibilities of human diet while exploring the frozen North, and actually places future Arctic exploration on a new basis."

Such was the declaration of the National Geographic Society, which awarded him a special prize.

The *Karluk*, Stefansson's ship, left Victoria, B. C., in June, 1913, and Nome, Alaska, the following month. His first object was to push boldly into the North and prove for himself that the Arctic, instead of being barren and inhospitable, was in fact "friendly," and could be made to support human life.

"I was told by the Eskimos," he says, "and I had read the same before in geographies and works of exploration, that the vast unknown areas beyond the Eskimo frontier were devoid of animal life. The Eskimos agreed with the rest of us in thinking that no one could live in those regions except for brief periods, and then only by taking along enough supplies to last for the whole period, or what must necessarily

be a dash into and a hurried retreat out of a region of permanent desolation.

“I could see no natural reason why the regions beyond the Eskimo frontier should be devoid of animal life. The fact that the Eskimos said so, and the fact that geographies and encyclopædias continue to make the same assertion, meant little to me. I concluded the presumption to be that animal life could be found even in the very centre of the icy area.

“My conclusion was that animal life had not been seen because it existed under the ice, where it would be inconspicuous. Hunting seals under thick polar ice resembles hunting as we commonly think of it less than it does prospecting. I already knew the methods of securing seals, and came south in 1912 firm in the belief that I could go into regions where Eskimos had never been, and into which Eskimos were unwilling to go, because they believed them devoid of resources, and that I could, in these regions, travel indefinitely, carrying on scientific or other work, and depending entirely on the resources of the country for food and fuel—food being the flesh of animals and the fuel their fat.”

Such was Stefansson's theory, but in carrying it out he met with constant opposition, not only from other authorities but also from members of his own party. The failure of the latter

to carry out his instructions on one or two occasions nearly caused fatal results. But on the whole the expedition was remarkably successful in demonstrating that a resourceful man could live almost anywhere in the Arctic circle.

In the spring of 1914, the explorer with two companions decided to follow with sledges the moving ice across Beaufort Sea from Martin Point, Alaska, to Banks Island. The adventure was a succession of thrills, but the party got across safely after traveling for three months. Meanwhile they found all the seals they needed, for both food and fuel.

The three men spent the summer of 1914 on Banks Island, the description of which destroys another of the old ideas of the barrenness of the Arctic regions:

“Here was a beautiful country of valleys, green with grass, or mingled green and brown with grass and lichens, except some of the hill-tops, which were rocky and barren. . . . There were sparkling brooks that united into rivers of crystal clearness, flowing over gravel bottoms. . . . Heather was most abundant, so were bull caribou, so that the meat we lived on and the fuel for cooking it were of the best.”

Stefansson and his companions were the first white men to penetrate the interior of this island, where they enjoyed “delightful, care-free jour- ”

neys," hunting and studying the country, while waiting for their relief ship. This did not come, through a failure to carry out his instructions. Later another ship was sent.

The next winter was spent in Banks Island where they lived in igloos very comfortably; and the following spring (1915) found him journeying across drifting ice again, this time to Prince Patrick's Island. The succeeding winter was again spent on Banks Island, and extensive sledge journeys were made during the following summer, resulting in the discovery of two large and several small islands. On one trip a point beyond the 80th degree of latitude was reached. Melville Island was chosen as headquarters for the third winter, that of 1916-17. Here coal was found and game was plentiful. Storkerson, his chief lieutenant, explored McClintock Channel and settled the question of its continuity in 1917, while Stefansson himself set forth with two white men and an Eskimo on a new journey to the north. But after going only 140 miles across the ice, the two whites became sick with scurvy and Stefansson had to turn back with two invalids on his hands. On reaching land, after a very trying time, during which provisions ran short, a supply of fresh caribou meat soon helped the sick men to make a rapid recovery.

In his haste to get back to Cape Kellett, Stefansson covered the last seventy or eighty miles on foot alone, walking almost continuously for twenty-eight hours. This was a wonderful feat of endurance and showed his good physical condition.

Here Stefansson learned that again his orders had been disregarded. One of his relief ships had been dismantled and broken up, and two of his best men, Bernard and Thomsen, had perished trying to head a relief expedition to him. They had not believed it possible for him to survive for so many months without shipped-in supplies.

Stefansson's story is full of surprises and in marked contrast to the usual forbidding pictures of the frozen North. Its chief value, aside from the interest of the narrative, lies in the fact that it "actually places future Arctic exploration on a new basis."

In the summer of 1921, Stefansson announced that he was planning a new expedition of two or three years' duration.

"The centre of the ice-bound regions of the North never has been reached by man," he said. "The North Pole region is 450 miles from the edge of the icy area, while the centre is 800 miles from the edge. We are chiefly interested in get-

ting to the centre and finding out what is there. I have no theories. It may be land or ice.”

Thus one hardy voyager after another steps forward to wrest the last of Earth's secrets away from her. Nor will mankind be content until the last square mile of her surface has been accurately mapped. With the rapid perfection of the motor vehicle and the airplane, far more rapid strides may be anticipated. We may even vision some of the explorers now living as sitting down, like Alexander, and sighing because there are no more worlds to conquer.

But so long as there remains an Unknown with its mystery and lure—just so long will men fare forth on uncharted seas—

To seek, to strive, to find,
And not to yield.

CHRONOLOGY

I. ARCTIC

<i>Year</i>	<i>Explorer</i>	<i>Nationality</i>	<i>Destination Reached</i>
982.....	Eric the Red.....	Norwegian..	Greenland
1497.....	John Cabot.....	English....	Labrador (?)
1500.....	Gaspar Corte-Real.....	Portuguese .	Greenland
1555.....	Richard Chancellor....	English....	Novaya Zemlya
1576.....	Martin Frobisher.....	English....	Baffin Land
1585.....	John Davis.....	English....	Davis Strait
1596.....	Willem Barrents.....	Dutch	Spitzbergen
1607.....	Henry Hudson.....	English....	Hudson Bay
1610.....	Jonas Poole.....	English....	Spitzbergen
1616.....	William Baffin.....	English....	Baffin Bay
1644.....	Simon Deshneff.....	Russian....	N. Siberia
1771.....	Samuel Hearne.....	English....	Coppermine River
1789.....	Alexander Mackenzie...	English....	Mackenzie River
1819.....	William Parry.....	English....	Melville Island
1820.....	John Franklin.....	English....	N. Canada
1822.....	Scoresby.....	English....	E. Greenland
1827.....	William Parry.....	English....	Sea North of Spitzbergen
1829.....	John and James Ross..	English....	Magnetic Pole
1845.....	John Franklin.....	English....	Northwest Passage
1853.....	Elisha Kane.....	American...	Smith Sound
1860.....	Isaac Hayes.....	American...	Grinnell Land
1864.....	Charles F. Hall.....	American...	Cape Brevoort
1873.....	Weyprecht and Payer..	Austrian....	Franz Josef Land
1878.....	A. E. Nordenskiöld....	Swedish	Northeast Passage
1879.....	George W. De Long...	American...	New Siberia Isles
1881.....	Adolphus Greely.....	American...	Polar Seas
1888.....	Fridtjof Nansen	Norwegian..	Polar Basin
1894.....	Walter Wellman.....	American...	N. E. Spitzbergen
1897.....	Auguste Andrée.....	Swedish	Unknown
1899.....	Duke of Abruzzi.....	Italian.....	Arctic Archipelago
1903.....	Roald Amundsen.....	Norwegian..	Northwest Passage
1909.....	Robert E. Peary.....	American...	North Pole

II. ANTARCTIC

<i>Year</i>	<i>Explorer</i>	<i>Nationality</i>	<i>Destination Reached</i>
1567.....	—————	Peru	"Terra Incognita"
1768.....	James Cook.....	English.....	S. New Zealand
1819.....	William Smith.....	English.....	S. Shetland Isles
1820.....	Bellinghausen.....	Russian.....	Alexander I. Isle
1823.....	Weddell	English.....	Weddell Sea
1831.....	John Biscoe.....	English.....	Enderby Land
1838.....	John Balleny.....	English.....	Balleny Isles
1840.....	D' Urville.....	French	Adelie Land
1840.....	Wilkes	American...	Wilkes Land
1841.....	James Ross.....	English.....	Victoria Land
1873.....	George Nares.....	English.....	Antarctic Circle
1892.....	Fairweather.....	English.....	Graham Land
1895.....	Kristensen	Norwegian..	Victoria Land
1898.....	Borchgrevink.....	Norwegian..	Victoria Land
1898.....	Gerlache.....	Belgian.....	Antarctic Circle
1901.....	Drygalski.....	German	Kaiser William Land
1902.....	Nordenskiold.....	Swedish	S. Shetlands
1902.....	W. S. Bruce.....	Scotch.....	Coats' Land
1907.....	Ernest Shackleton.....	English.....	100 M. from Pole
1908.....	J. B. Charcot.....	French	Alexander I. Land
1911.....	Roald Amundsen.....	Norwegian..	South Pole
1912.....	R. F. Scott.....	English.....	South Pole

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